Volume 81
Number 9

IRON TRADE REVIEW

Cleveland, O.
Sept. 1, 1927

Jazz Puts Safety Campaigns "Over the Top"

By A. J. Hain

WHAT is there about the burying, drowning, lynching, or burning of "Old Man Carelessness" that impresses the minds of plant employes, frequently leading them to work with fewer accidents, or without any, for a long time thereafter?

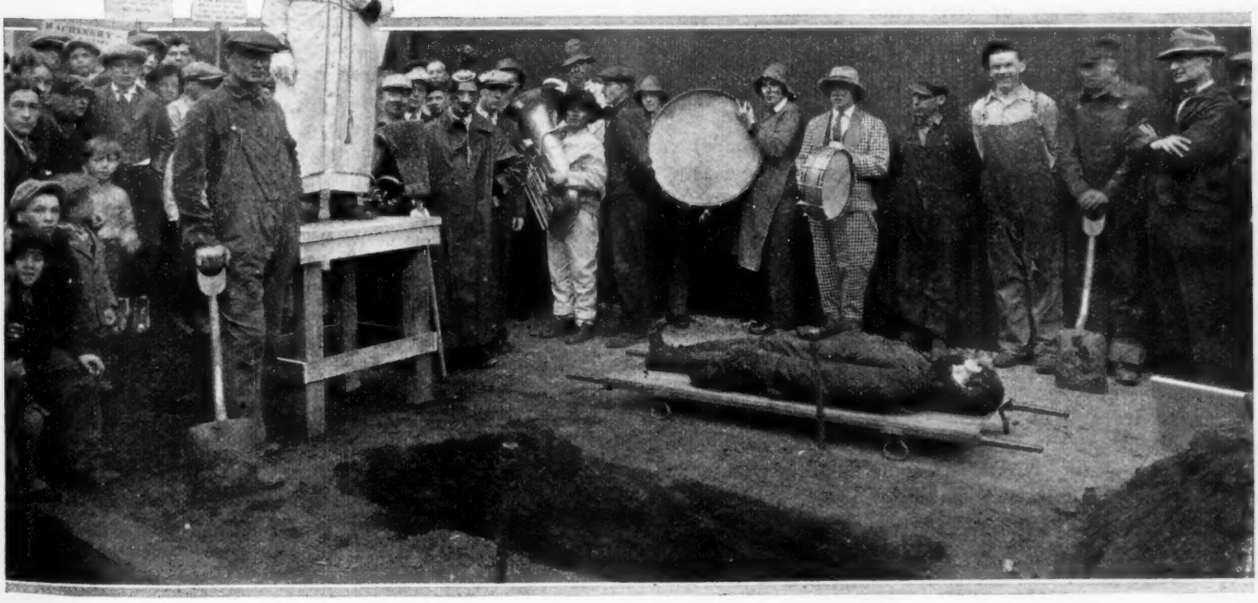
American workmen seem to relish a dash of humor in that which really appeals to them as most serious business, as the American soldiers liked "jazz" music when they marched to the front or before they went over the top. Employes frequently do difficult things with a flourish, a yo-heave-ho spirit, when sober exhortations fail. That is why lectures are not half so good in priming them for safety campaigns, as a melodrama in which they all participate.

Comic antics, of course, never won a safety contest, but they have served well to keep the crowd in a happy frame of mind while receiving real training or instructions.

One of the most successful safety campaigns in a steel plant was started with a friendly, heart-to-heart talk by "the big boy himself." This matter was not delegated to a professional safety man, although he might have done just

(Top) — The "funeral procession" for I. M. Carelessness at the Chicago plant of Joseph T. Ryerson & Son Inc.

I. M. Carelessness at the grave. For 45 days after this ceremony there was not an accident in the plant



Employes of the Ryerson Chicago plant at final ceremony for I. M. Carelessness, and a view of his grave. The "funeral oration" was a plea for safety

as well. The general manager told the employes the campaign was being put on for their benefit. The company could continue operating regardless of how many men were maimed. The effort was made primarily for the men, and their families. He concluded his short talk with: "Now are you with us? Will you help us help you?" It was easy to see that the men responded to this; they felt the management of the company was sincere.

But the next day they had to "blow off steam." An effigy of "Old Man Carelessness," with hideous countenance, was dragged and kicked through the streets surrounding the plant. Then a weight was tied about its neck and it was thrown in a pond. Thus with theatricals the men showed their determination to work safely. And they did; their plant won a contest, with fewer lost time accidents than any other of a similar group.

A band and a parade are far more effective as a "starter" for the enthusiasm of a safety campaign than is a blackboard full of statistics pertaining to accidents, in the experience of some companies. The statistics and lectures come along later when interests has been aroused; to introduce them at first is to put a wet blanket on the campaign.

"A man may talk all day, urging workmen to be careful, but he will not accomplish as much as if he kept before them a picture or a symbol of the consequence of accident or injury," said a well-known safety director. "A play or a contest gets their attention where other methods fail."

The great reduction in the number of accidents in iron and steel plants is said to be due to persistent efforts of various kinds to develop "safe workers." A student of safety problems states that only 30 per cent of the possible avenues of accident can be safeguarded by means of mechanical devices; that the only protection in other instances is training and intelligence.

Talks, motion pictures, contests, trophies, "courts" and investigations by plant committees, placards, crosses at the places where accidents have occurred, are some of the methods tried for keeping before employes the need for caution. Iron and steel manufacturers who have stressed safety work, as a group, have reduced their accident frequency rate 86 per cent in the past 12 years, while other establishments, according to the bureau of labor statistics, have reduced their rate only 15 per cent. The industry as a whole has shown a notable reduction in the number of accidents at the same time that it has increased production.

How two companies have reduced their accidents by impressing their employes with the need for working safely is described in the following paragraphs. The Joseph Ryerson & Son Inc., Chicago plant, purposed to operate a month without any accidents.

"We realize that in many industries a month's record of no lost time accidents is by no means unusual, but to us it is a wonderful accomplishment and something of which we can justly be proud," said H. C. Dent, of the company's safety department.

"Our working force is not very large, consisting approximately of 400 men, but it operates practically every type of machine used in warehousing steel and machinery. The men handle many thousands of tons of steel at a high rate of speed.

"In our Chicago plant we operate 32 overhead traveling cranes, three massive plate shears, two large high-speed friction saws, five bar shears, eight bar benders, in addition to plate rolls, bulldozers, corrugators, arching machine and tractors. Many small machines such as hacksaws, threaders, coilers and grinders also are used. The machine shop is equipped with a full line of machine tools. The maintenance department handles a wide variety of work, such as millwright, electrical, pipe fitting, sheet metal, blacksmithing and rigging.

"Accident prevention is not a new development in Ryerson plants; in fact such work has been carried on continuously since 1915 and is considered part of regular operations. A number of departments have operated for several months without a lost time accident, but the plant as a whole was never able to accomplish it before May, 1927. In order to succeed with a campaign for a no-accident month for the entire plant it was necessary to do something out of the ordinary to arouse the interest of everyone."

The first announcement regarding the campaign was made about the middle of April, on large signs in the plant. These requested the co-operation of all employes. No other advertising was attempted until several days before May 1. However, in the meantime the safety department prepared a complete series of safety signs, posters, bulletins and charts

to be used after the campaign was started. It also arranged all other details.

A number of signs were put up April 29, calling attention to a big parade and a special event in front of the main entrance to the general offices at 12:30 May 2. All employes were requested to be present. To make each man realize the significance of the safety campaign he was asked to sign a printed pledge, as follows:

Safety Pledge

I hereby promise and pledge my support to do everything in my power to prevent injury to myself or to others during the month of May "No Accident Campaign."

Signed ——————No. ———

A hole was dug in the parkway directly opposite the main entrance to the general offices, the morning of May 2. This was in a conspicuous location, and the hole strangely resembled a grave. Great interest had been aroused regarding the parade and the "special event."

Promptly at 12:30 the entire plant was shut down for a half hour. A ten-piece band, employes, started to parade from the north end of the plant, followed by two pallbearers carrying a first-aid stretcher, on which reposed a life-size "dummy" representing "Old Man Carelessness." Then came members of the safety committee, marching solemnly, and carrying safety signs, admonishing all to be careful.

As the parade wended through the various departments—the plant covers an area of four city blocks—each foreman had his men ready to fall into line. Many of them carried signs boosting the safety campaign. These signs were originated by the employes, and were an unexpected addition to the parade.

When the head of the parade reached the plant employment office it was halted by the band leader and an opening made for a mysterious robed and masked figure. The identity of this individual was known to few, and this caused considerable comment as to who he was and his reason for being in the parade. The parade then proceeded and finally arrived where the hole was dug in the parkway.

Laid Away to "Hail! Hail!"

When all were assembled, the mysterious robed and masked figure mounted a platform and read a specially prepared burial service and safety sermon. The thought was that "Old Man Carelessness" was responsible for all accidents, and that by his death and the burial of his body the employes would be able to operate the plant in future without accidents. The mysterious robed and masked figure, D. P. Hughes, of the city sales department, played the role seriously.

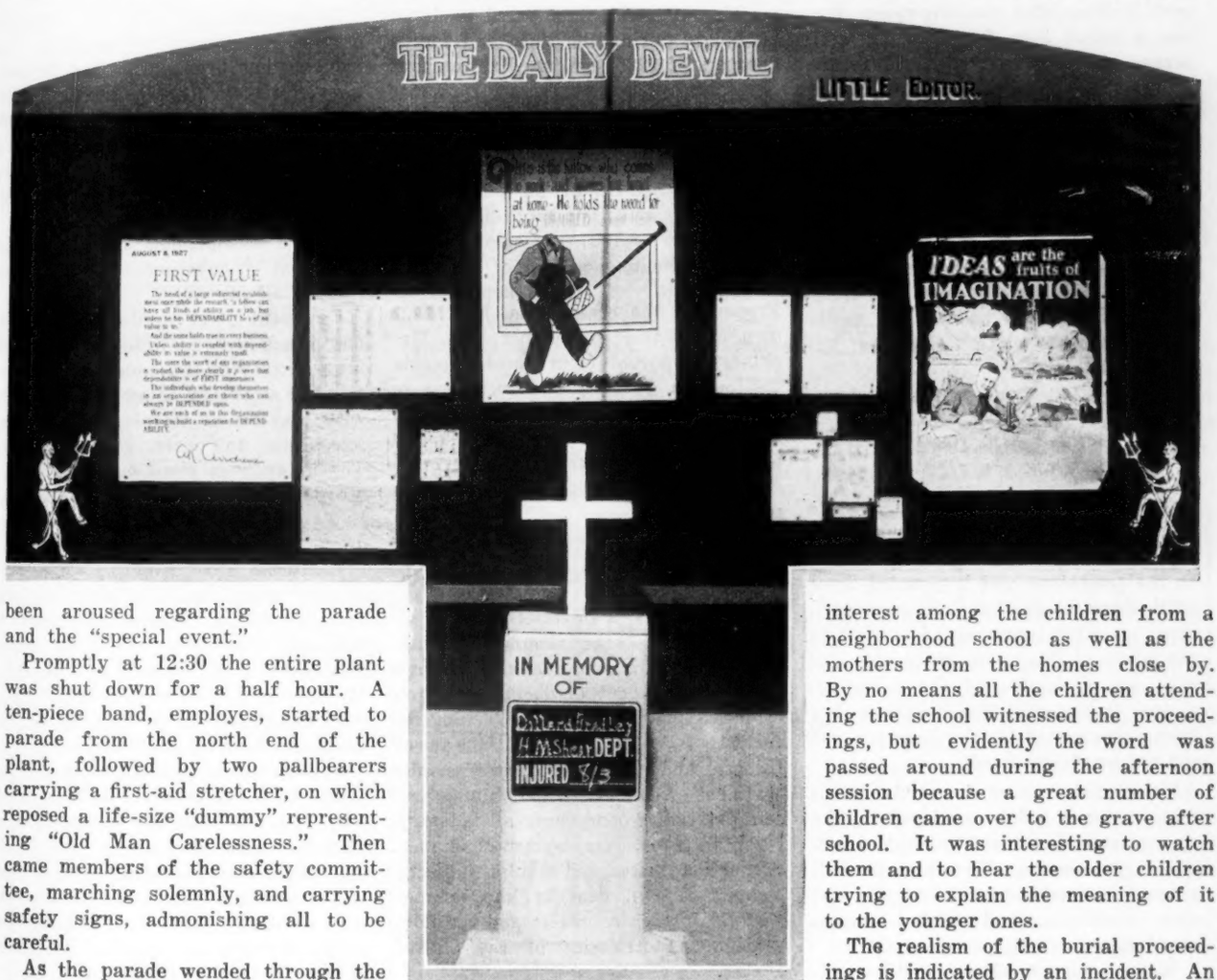
"Old Man Carelessness" was a life size figure with one leg off just above the knee and an arm off just above the elbow. The head was a hideous mask with fiery red hair and beard. He was finally laid away, with the band playing "Hail! Hail! the Gang's All Here."

Immediately after the burial a wood headstone was erected and flowers planted. The plot was seeded and is now green. An electric floodlight illuminates the grave all night, thus calling it to the attention of the night crew and pedestrians.

It is surprising to note the number of pedestrians and automobilists who stop at the grave to read the epitaph on the headstone.

The parade and ceremony, being held during the noon hour, aroused great interest among the children from a neighborhood school as well as the mothers from the homes close by. By no means all the children attending the school witnessed the proceedings, but evidently the word was passed around during the afternoon session because a great number of children came over to the grave after school. It was interesting to watch them and to hear the older children trying to explain the meaning of it to the younger ones.

The realism of the burial proceedings is indicated by an incident. An uneducated neighborhood woman seeing the "dummy" thought it was a man who had been injured in the plant and when she heard that he was to be buried then and there she be-



A safety bulletin board at the plant of the Newport Rolling Mill Co. If a workman is injured his name goes on the tombstone temporarily

came much excited, to the great amusement of the crowd. Several uniformed policemen present added a touch of realism.

A large chart, representing all departments and with a square for each day of the month, was hung on the outside of one of the buildings. Each morning the preceding day's record was marked on the chart. As the end of the month drew near and the record still was clear the posting was watched with great interest, and no little suspense.

After going through the month of May successfully, without a lost time accident, the program was carried on into June and the employes succeeded in keeping the record clear up to the sixteenth day when a minor infection caused a loss of several days. As the last lost time accident had happened on April 19 employes had established a record of 57 days without a lost time accident.

C. R. Little, safety director, Newport Rolling Mill Co., Newport, Ky., has a novel idea for reducing accidents. At the main entrance to the mill he has placed a large bulletin board with the caption:

Daily Devil

On the board is placed daily all notices of interest to the men in regard to the mill; clippings from magazines, pictures, posters, reports; in fact anything that will attract attention, and keep the minds of the men on safety.

In front of the board is a tombstone, painted white, with the lettering:

In Memory of
John Doe
Sheet Mill Dept.
Injured 8/7/27

On top of the tombstone is a white cross. The name of each man who receives a lost time injury is placed on the tombstone and it remains there until there is another lost time accident. A white cross also is placed in the plant at the place where he met with the accident and the cross remains there until the accident has been investigated by the Safety Court and responsibility fixed.

The Safety Court is a "kangaroo court" with a judge appointed by the superintendent, the safety director acting as prosecutor. The court investigates and fixes responsibility for lost time accidents, and makes recommendations.

When a man is charged with violation of a safety rule, his foreman acts as his attorney and if found guilty he is given from one to 100 days suspended sentence. When his accumulated penalties amount to 100 days in one year, he is automatically discharged. Each court case is posted on the bulletin board.

"No man likes to see his own name on a tombstone," says H. M. Davis, superintendent of the plant. "The first man who had his name put up said he had had his name in many places but never before on a tombstone. He does not want it on the tombstone again and will make every effort to work safely from now on.

"The white cross in the plant, placed where a man was injured, calls the attention of every one who sees it to the fact that a man was injured there, and has a steadying effect on him. The combination of the publicity, possible penalty and seriousness of each case is making the men think, and thinking men are safe men."

Italy Continues To Buy Less Machinery

The decline in Italy's imports of machinery, which manifested itself so strikingly during the third and fourth quarters of 1926, continued throughout the initial three months of 1927, for which detailed records have recently been made available. Imports from Germany, Great Britain, Switzerland, and the United States, as well as total imports, dropped sharply during the first quarter of 1927, as compared with the corresponding quarter of 1926.

Quantities of machinery from France, on the other hand, held their own, while their value increased. Machinery imported from Czechoslovakia declined in quantity but increased in value. The much smaller imports from Austria diminished both in quantity and value, states the industrial machinery division, department of commerce.

1926 Commerce Yearbook Now Available

Volume I of the Commerce Yearbook for 1926 is now available through the superintendent of documents, government printing office, Washington, for $1. Compiled by the bureau of foreign and domestic commerce, department of commerce, the volume presents statistics concerning all industry, foreign trade, employment, finance, production, prices and similar subjects. Volume II will deal in like manner with 70 foreign countries and the noncontiguous territories of the United States.

Canada's production of ferroalloys in 1926 was 26,958 long tons, compared with 37,594 tons in 1925 and 25,709 tons in 1924.

Simplification Projects' Status Given

The present status of the various simplified practice projects of interest to the industry now under way by the simplified practice division, department of commerce, is shown by the following statement of the division:

Kalamein doors—A survey is under way among the manufacturers of kalamein doors for data upon which to base a tentative simplified practice recommendation for the consideration of a joint conference to be held in the fall.

Turnbuckles—A committee composed of three manufacturers, which was appointed at the preliminary conference held at the department of commerce May 10, is now conducting a survey of current practices with a view of drafting a tentative recommendation for consideration at a general conference of all interests to be held in the early fall.

Ornamental iron work—A simplified practice committee representing this industry has been authorized to make a survey covering the sizes of stairway openings for ordinary iron and steel stairways such as those used in schools, office buildings, hotels, warehouses, etc. Upon completion of the survey the committee will draft a tentative recommendation for presentation at a subsequent joint conference of all interests.

Casement steel windows—A simplified practice committee is now making a survey of this industry to ascertain the sizes now being manufactured, with the idea of developing a recommendation to cover standard sizes. The industry is planning to develop a recommendation at a joint conference to be held in the fall under auspices of the division.

Industrial steel windows—A survey is now being made of this industry by a simplified practice committee to ascertain the sizes now being manufactured. The industry is planning to develop a recommendation at a joint conference to be held in the fall under auspices of the division.

Stoves—In accordance with a resolution at its convention in New York May 11th the National Association of Manufacturers of Heating and Cooking Appliances had authorized a simplified practice committee to proceed with the drafting of a recommendation to go through the regular procedure of the department in the fall.

Railroad taxes in 1926 represented 3.6 per cent of gross revenue, against 3.7 per cent in 1925 and 3.5 per cent in 1924.

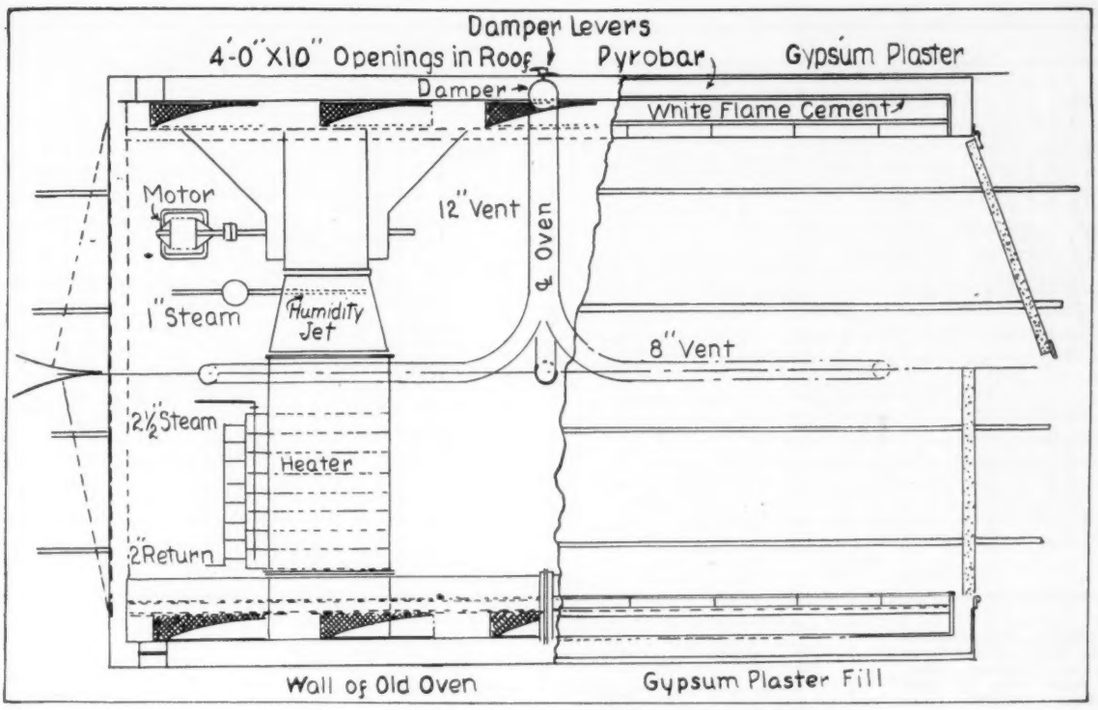


Fig. 1—Plan View of Core Oven Into Which Steam Is Introduced

Humid Oven Atmosphere Eliminates Surface Cracks

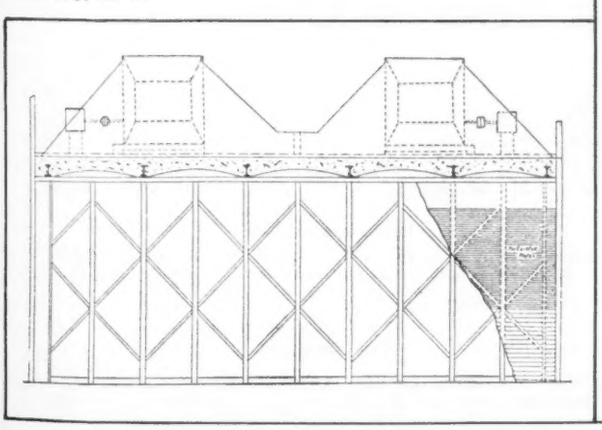
By George Wright and J. M. Sampson

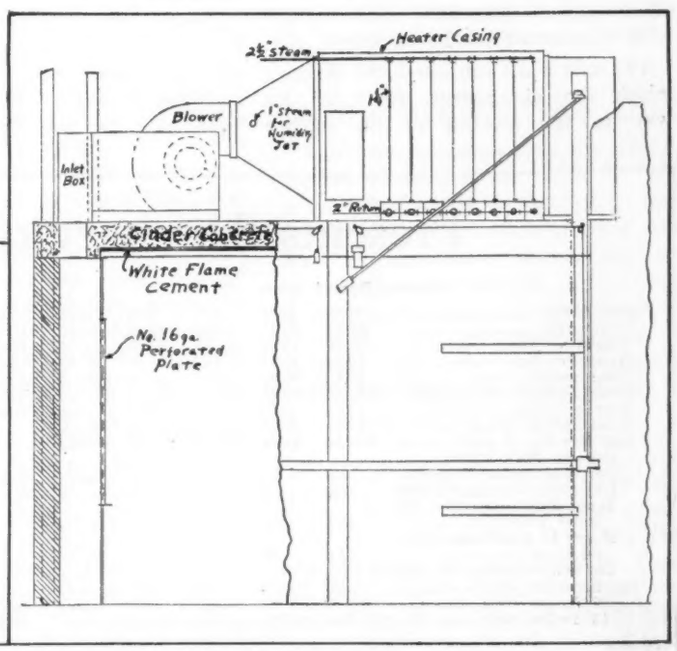
NEARLY four years ago it became necessary to build an additional large car type mold drying oven in the steel foundry of the General Electric Co., Schenectady, N. Y. Plans of the usual type of oil-fired oven were submitted for approval, but before acceptance could be obtained, the question arose as to whether or not the principles used in drying porcelain and other materials could be incorporated. This involved drying in a more or less humid atmosphere, and keeping up a fairly brisk circulation of the atmosphere within the oven, at least during the major portion of the drying time.

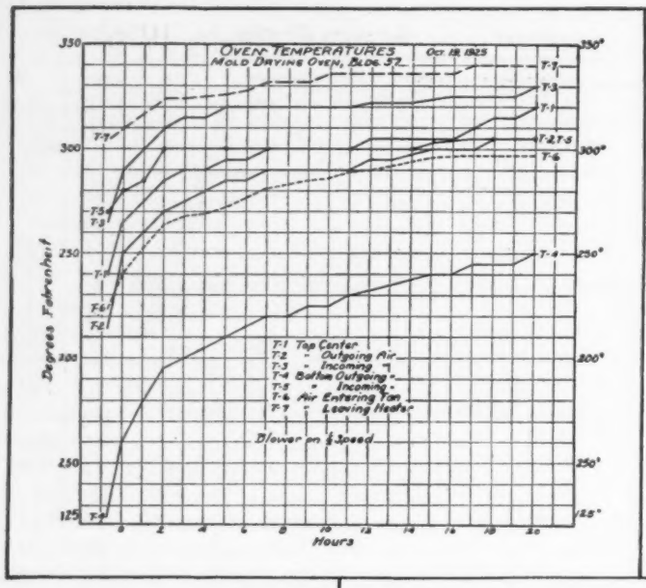
Preliminary tests in a small oven 7 feet square by 8 feet high were made and showed promise. Later tests were made on a larger oven, and satisfactory results were apparent. Later additional tests were made on

Abstract of paper presented at the Chicago convention of the American Foundrymen's association. The authors are associated with the foundry department, General Electric Co., Schenectady, N. Y.

Fig. 2 (Below)—Side Elevation of Core Oven. Fig. 3 (Right)—End elevation







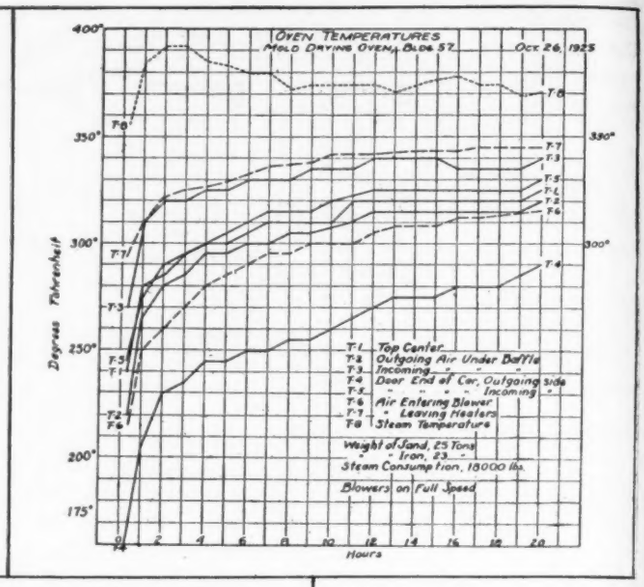

OVEN TEMPERATURES
MOLD DRYING OVEN, BLDG. 57
OCT 26, 1925
Degrees Fahrenheit
Hours
T-1 Top Center
T-2 Outgoing Air Under Baffle
T-3 Incoming " " "
T-4 Door End of Car, Outgoing Side
T-5 " " " Incoming "
T-6 Air Entering Blower
T-7 " Leaving Heaters
T-8 Steam Temperature
Weight of Sand, 25 Tons
" " Iron, 23 "
Steam Consumption, 18000 lbs.
Blowers on Full Speed

Fig. 4 (Above)—Temperatures in Various Parts of the Oven During the 20-Hour Run, Blowers Being Run at Half Speed. Fig. 5 (Right) Oven Temperatures During 20-Hour Run, Blowers at Full Speed

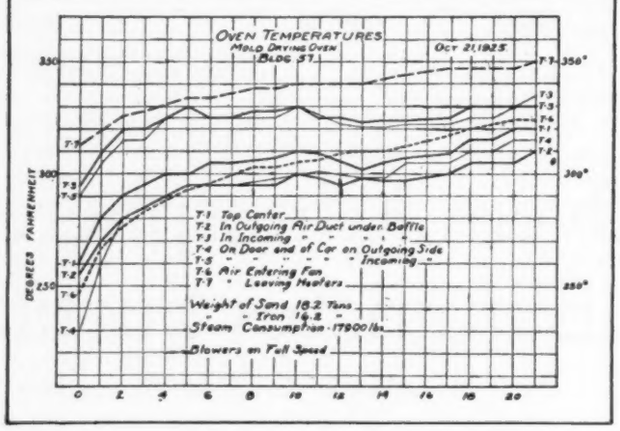

OVEN TEMPERATURES
MOLD DRYING OVEN
BLDG 57
OCT 21,1925
DEGREES FAHRENHEIT
T-1 Top Center
T-2 In Outgoing Air Duct under Baffle
T-3 In Incoming " " " "
T-4 On Door end of Car on Outgoing Side
T-5 " " " " " Incoming "
T-6 Air Entering Fan
T-7 " Leaving Heaters
Weight of Sand 18.2 Tons
" Iron 14.2 "
Steam Consumption 17900 lbs.
Blowers on Full Speed

Fig. 6 (Above)—Chart Showing the Temperatures in an Oven During a 20-Hour Run with Blowers at Full Speed

a larger oven, and after two years of experimental tests the company proceeded with the design of the present large oven. This oven is approximately 16 feet wide, 30 feet long, and 11 feet 6 inches high, inside dimensions. The oven walls are 8-inch gypsum block, with 1-inch white flame plaster inside and 1-inch gypsum plaster outside. The roof is composed of 12 inches of cinder concrete, the floor is 12 inches of concrete on top of dirt base. Doors are 4-inch channel frames, covered with sheet metal and filled in between with a patented insulating brick.

The side walls contain ducts through which the air passes, down on its way to the interior of the drying oven and up as it returns to the fans and steam heating coils.

Plates Are Perforated

The interior wall of the duct is composed of perforated steel plates as indicated on the drawing shown. On tope of the oven these ducts are connected by well insulated conductors of two fan blowers. These are of the type used for heating factory buildings. The air is heated in these two heat exchangers and is forced down the hollow wall or duct, and across the surface of the molds to the duct within the opposite wall. When the steam heat first is turned on and the blowers started, steam is injected into the oven until the temperature of the center of molds reaches 180 degrees Fahr. This varies from 2 to 4 hours. This humidity prevents the skin or surface of the mold dying and assures a steady flow of moisture from the interior of the mold to the surface by capillary attraction.

During October, 1925, a series of tests were made on this oven as well as on an oil-fired oven of same size located adjacent to it. A recording

Presents Summary of Tests on Ovens

Steam Heated Oven

Date, 1925	10/5	10/6	10/7	10/8	10/9
Hours run	21.27	22.11	21.13	21.00	15.92
Weight of sand, tons	22.15	14.14	24.53	28.25	18.06
Weight of iron, tons	26.00	25.30	29.60	37.87	29.29
Total weight, tons	48.15	39.44	54.13	66.12	47.55
Total pounds steam used	16,177	15,063	15,250	15,714	11,700
Average steam per hour	760	682	720	748	734
Total cost of steam	$7.44	$6.93	$7.01	$7.23	$5.38
Cost per ton of sand	$0.335	$0.49	$0.286	$0.255	$0.297
Dummy Mold Data:					
Per cent water in sand	6.5	6.1	7.0	7.2	.....
Depth of drying, inches	5	6	4	4.5	.....
Temperature at center, degrees Fahr.	212	212	212	212	.....
Hours to reach this temperature	14	13	15	18	.....
Per cent moisture at finish:					
2 inches deep	0.0	0.0	0.0	0.0	.....
6 inches deep	1.0	0.3	1.0	1.2	.....
10 inches deep	3.6	3.1	3.9	4.0	.....

Oil Fired Oven

Date, 1925	4/20	4/21	4/22	4/24
Hours run	16.00	16.00	16.66	16.16
Weight of sand, tons	18.20	21.80	27.20	32.60
Gallons oil burned	251	254	273	330
Average gallons per hour	15.6	15.8	16.4	20.4
Total cost of oil	$17.57	$17.78	$19.11	$23.10
Cost per ton of sand	$0.965	$0.815	$0.703	$0.708

Dummy Mold Data

Per cent moisture at finish	Cold part	Hot part
2 inches deep	0.0	0.0
6 inches deep	1.8	1.0
10 inches deep	4.0	8.8

Cost Summary

	Steam heat	Oil fired
Average cost heating per run	$6.80	$19.39
Average cost per ton of sand	$0.317	$ 0.775

flow meter was installed in the steam line leading to the heating coils, and the discharge line leading from the steam traps was carried to the outside of the building into two barrels placed on scales. A small condenser was inserted in the line for cooling the condensate before it emptied into the barrels. The amount of steam consumed was found both by weighing the condensate and by integrating the flow meter charts. The amount of steam consumed as shown by the flow meter was 1.2 per cent higher for the week than that found by weighing the condensate.

Temperatures Were Recorded

Thermocouples were installed at different points in the oven and in a dummy mold which gave results as shown in the summary of oven tests. The dummy mold was 36 inches square and 20 inches high and was placed on the frame of the car in the corner away from the incoming air, so that it would be in the least advantageous position as regards drying.

The temperature readings in the mold were taken at the vertical center, 2, 6 and 10 inches below the surface or top of the mold.

Readings of air temperatures within the oven were taken at the top center, in the corners of the oven 18 inches from the floor and 2 feet from the doors, and also of the incoming and outgoing air in the ducts.

The weights of sand and iron, including cars, flasks, bottom plates, etc., in each charge were obtained by careful calculations of the cubical contents of these materials.

The oven is equipped with a vent pipe which is closed by a butterfly damper. This damper was closed during all the tests. Steam is piped to the inside of the heater casing for supplying steam to humidify the air.

The original speed of the motors which were direct connected to the fans was 1100 revolutions per minute. During these tests the speed was reduced to 550 revolutions per minute for experimental purposes and it was found that the condition of the molds were not quite as dry as obtained from the higher speed. Consequently it was found necessary to return to the higher speed. A summary of the tests is given in the Table. Additional data is given in the charts shown in the other illustration.

Steam was used for heating the circulating air in this oven for various reasons. One was because the steel foundry is adjacent to the main boiler room of the plant, and also because, with the steam temperature running approximately 375 degrees Fahr., it would be impossible to overheat the sand molds.

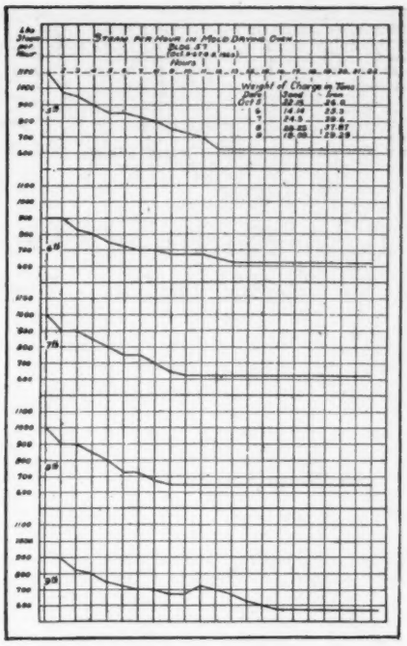


FIG. 7—POUNDS OF STEAM PER HOUR DURING 22-HOUR RUNS

It is recognized that many foundries would not have steam available in sufficient quantity or with sufficient superheat. However, it is perfectly feasible to heat the circulating air by means of indirect heating, using oil as fuel. Thermostatic control of the oil burner to prevent the oven temperature from exceeding 350 degrees Fahr. should be provided, and provision made to introduce steam into the air current at a convenient point; this steam could be low pressure as well as not.

Effect on Molds and Castings

It has been found that a given mold can be dried in nearly the same time interval, leaving practically the same or less residual moisture at a given depth, in this new oven as in the older oil-fired oven. But there is no comparison between the surfaces of the molds dried in the new oven, with those dried in the older ovens. There is an entire absence of cracks in the surface of the silica wash coating, and even if one scratches away this silica wash, the sand below is found well bonded and free from any tendency to wash away with the metal during pouring.

The discounts in this foundry are running below 1.75 per cent of castings shipped, and it is seldom that a casting made in a mold dried in the new oven is found in the discount list due to mold cutting, scabbing, and other causes which can possibly be attributed to improper drying.

Crude Oil Makes Slight Gain in 1926

Production of crude petroleum in the United States in 1926 amounted to 770,874,000 barrels, an increase of 7,131,000 barrels, or nearly 1 per cent, over 1926, according to the United States bureau of mines. Of the total, 633,726,000 barrels, or 82 per cent, was classed as light oil. California, the leading producing state, declined 8,000,000 barrels in 1926, but Oklahoma registered a gain of 2,500,000 barrels and set a new record. Imports of crude petroleum in 1926 amounted to 60,382,000 barrels, a slight decline from 1926. Increased shipments from South America nearly compensated for the decrease in imports from Mexico.

World production of crude petroleum in 1926 was 1,096,000,000 barrels, an increase of 27,000,000 barrels over 1925. The United States accounted for 70.3 per cent of the 1926 total, compared with 71.5 per cent in 1925.

Committee To Seek Jack Chain Data

Manufacturers of jack chains have organized a committee to conduct a survey of current practice with regard to production and sales in order to obtain information as a base for a simplified practice recommendation. This action follows a preliminary conference of representative manufacturers under the auspices of the division of simplified practice, department of commerce, Washington. All manufacturers of jack chains will be canvassed to ascertain their reaction to the elimination of various sizes. A. B. Way, of the Turner & Seymour Mfg. Co., is chairman of this committee.

Turnbuckle Styles Up

A general conference on the simplification of turnbuckles is to be held in Atlantic City, N. J., Oct. 19, in connection with the convention of the National Hardware association, according to announcement by the simplified practice division, department of commerce. At this conference it is expected that the recommendations made at the preliminary conference in this matter will be accepted.

Future meetings of shippers' advisory boards include Pacific Coast board at San Francisco, Sept. 16, New England board at Burlington, Vt., Sept. 23, and Atlantic states board at Atlantic City, N. J., Oct. 6.

Salesmen's Cars Important Item in Sales Costs

Agreement of Large Eastern Machine Tool Builder Proves Successful in Two Year Test

DISCUSSION of the problems incident to providing salesmen with automobiles always finds a receptive audience in conventions, meetings and executive conferences. Considerable interest has been taken in this subject by machine tool builders and distributors, and the article published in IRON TRADE REVIEW, July 1, 1926, evoked much argumentation. A wide variety of methods were discussed in that article, pointing out the manner by which different companies financed automobile purchases by their salesmen, how they reimbursed the salesmen for traveling, who paid the insurance, and numerous other factors entering into the situation.

A large eastern machine tool builder, operating in the New York metropolitan district has had in effect a system which it discloses as offering a satisfactory settlement for the salesmen, and yet is not working a disadvantage to the company. As evidence of the satisfaction that the salesman is able to get from its working arrangement, it cites the following instance where an employe purchased a new car. The trade in value of the old car was $925 and the company allowed a depreciation of $684.92, making a total of $1609.92. The original price of the car was $1475 so that in the trade the salesman made a profit of $134.92. The car that was traded in had registered 23,240 miles. In addition to the mileage piled up in company use, on which depreciation was allowed, the salesman had traveled 1853 miles for personal use, without cost except for gasoline used. The salesman had the advantage of insurance protection. Out of the $134.92 profit the salesman was obliged to pay for the upkeep of tires other than for the tires and extras included in the original price.

A standard working agreement has been drawn up by the eastern machine tool builder, with specified items that the salesman is to pay and definite charges for the company to meet. The terms of the agreement, in force since early 1925, with success, is briefly as follows:

Salesman is to buy and own his own car. The company will allow the salesman to select any make or priced car he desires but considers that a satisfactory car for business should be purchased at a price not to exceed $900, therefore, depreciation will be based upon this amount. When a salesman does not have the ready cash or cannot make satisfactory purchasing terms, the company will assist in financing the purchase by holding chattel mortgage on the car for whatever amount is necessary for the company to advance and for which a nominal interest, 5 per cent, will be charged.

The expense of maintaining the car is to be borne by the company and salesman as follows:

The Company Will Pay

For gas and oil when the car is operated for company business, and general greasing of the car as required. Down town or daily parking or garage storage when necessary. Night garage storage when out of home town over night. Washing of car not in excess of once a week. Removal of carbon and regrinding of valves not more often than every 5000 miles.

License and fire, theft, property damage and public liability insurance. Liability insurance to protect both the company and the salesman whether driving for business or pleasure. Depreciation—A minimum of $275 per year for 5000 miles or less will be allowed for depreciation and cost of tires. For all mileage in a year in excess of 5000 miles, a rate of 2½ cents additional per mile will be allowed. Receipts for all the above expenditures are to accompany salesman's weekly expense report.

The Salesman Will Pay

Regular home or over night garage rent. Gas and oil used when driving for personal business or pleasure. All replacement of tires, all repairs and upkeep excepting the removal of carbon and regrinding of valves as provided for by the company payments.

Payment of depreciation—The depreciation allowance will be set up on the company's books monthly and paid every six months to the salesman who has purchased his car without an advance from the company. Where the company has advanced funds to purchase the salesman's car, the depreciation will be applied to reduce the salesman's loan. If a salesman, who has purchased his car without the company making an advance, desires to leave the depreciaton accumulate so that when he desires to trade in for a new car cash will be available, the company will allow all such salesmen 6 per cent interest on the amount of depreciation accrued to his credit.

The salesman is at liberty to buy whatever style or price car he desires. It is understood, however, that the more expensive the car purchased the greater the expense will be for depreciation and upkeep which the salesman will have to assume. The company will allow salesman to choose as to when he desires to trade in for a new car. The company will continue to pay the $275 and 2½ cents per mile over 5000 miles per year as long as the salesman uses the car without regard as to whether or not the company refunds more than the original price of the car.

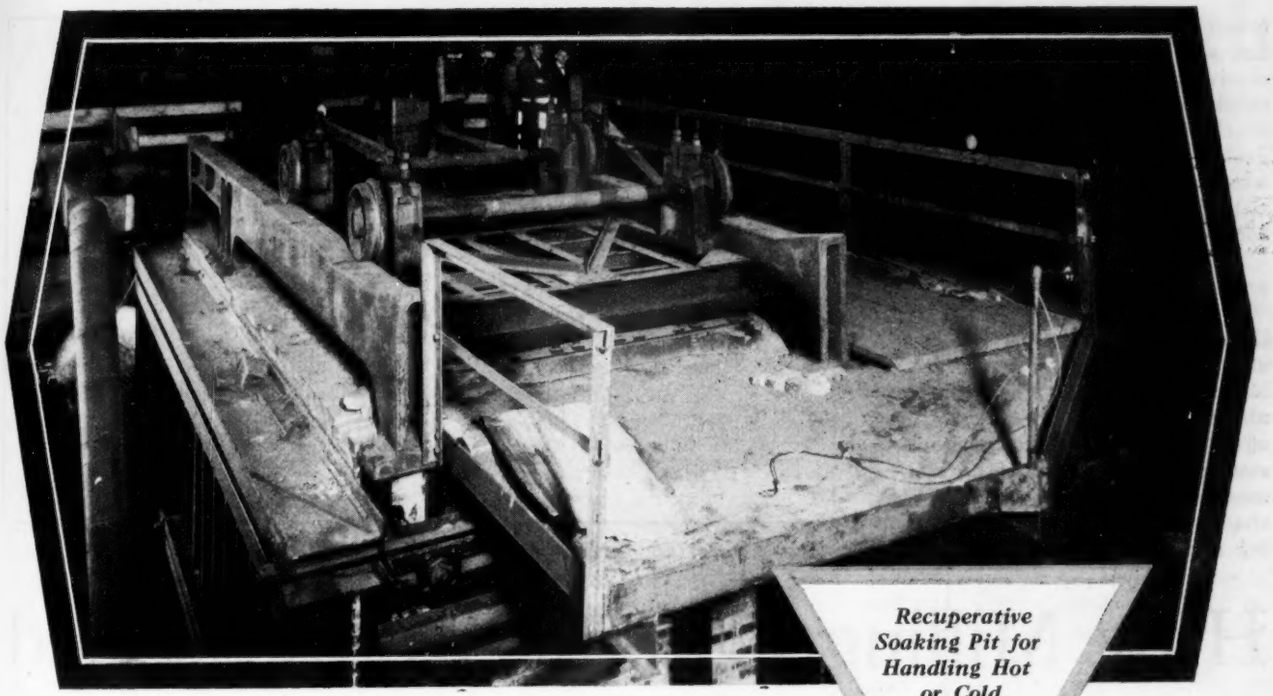
The above agreement between salesman and company should prove interesting to many other executives than those in the machine tool industry. The terms of the above agreement seem to favor to a great extent the salesman, yet the company that has operated over two years under this plan claims the expense is not disproportionate compared to some of the other methods in use.

More Freight Cars Await Repair Shops

Freight cars in need of repair Aug. 1 totaled 145,590 or 6.3 per cent of the number on line, according to the car service division of the American Railway association. This was an increase of 472 cars over July 15. It was, however, a decrease of 20,166 cars compared with the same date last year. Freight cars in need of heavy repair Aug. 1 totaled 103,318.

Fewer Are Unemployed

Industry throughout Massachusetts is in fairly healthy condition, according to a report of organized crafts tradesmen. For several months 273 unions of the state have been reporting the number of unemployed members to the state department of labor and industries. In June there were about 9000 unemployed and in July this had dropped to 8200. The number of members not working, due to strikes, in June was 460 and in July 140.



Recuperative Soaking Pit for Handling Hot or Cold Ingots

Soaking Pit Operates on Recuperative Principle

UNTIL recently little change has been made in the general characteristics of soaking pit design. Since the original regenerative principle was employed, improvements have had to do chiefly with the grade of refractory employed and the type of reversing equipment used. In its original conception, the soaking pit consisted merely of an underground pit, in which the ingots were placed as soon as possible after casting in order that they might equalize their temperature before rolling. No attempt was made to supply additional heat until many years later.

Additional heat over that contained in the hot ingot had to be supplied to the pit in order that the ingots could be held at the proper rolling temperature until wanted. This also was necessary in order that cold ingots might be heated. Regenerative checker chambers next were added to the soaking pit for the purpose of salvaging heat from the waste gases and preheating the air and gas before entering the combustion chamber. The added regenerators made it necessary to reverse the flow of gases periodically, since the heat in the waste gas was stored up in the brick checkers and was only transferred to the incoming air and gas after the flow of gases was reversed. In addition to the fuel saving, a faster heating pit was obtained, due to the increased flame temperature resulting from the preheated air and gas. In spite of the big advance made by the addition of regenerators to the soaking pit, it has long been known that the thermal efficiency of the soaking pit as a transfer unit is extremely low. The figures from a recent heat balance obtained in an extremely modern installation give a thermal efficiency of only 8.6 per cent.

French Pits Are Small

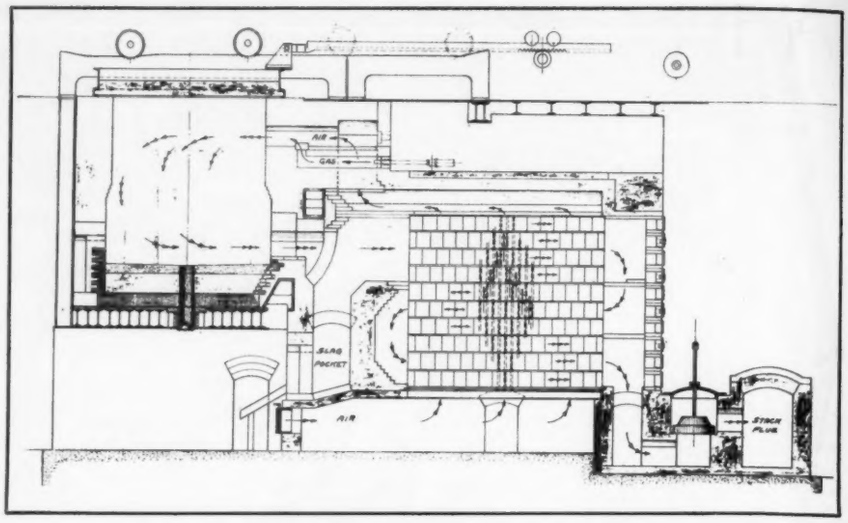
In France, fuel economy has always been of major importance and was the primary reason for the application of the recuperative principle to soaking pits. Recuperative soaking pits have been in operation in France for many years and have proven conclusively the increased efficiency which can be obtained with this type pit. However, the French type recuperative pits are much smaller than American practice would consider, usually holding two standard ingots per pit.

Because of the success of this type pit in France, a trial installation was made at the Donner Steel Co., Buffalo. This pit is 5½ feet wide, 9 feet long, holds six ingots 21½ inches square of approximately 7800 pounds each, and has been in operation since Feb. 7, 1927. It was designed and built by the Chapman-Stein Furnace Co., Mount Vernon, O. The American Tube & Stamping Co., Bridgeport, Conn. has ordered four 8-ingot

In designing the original recuperative pit, care was taken that the recuperator be sufficiently large and placed low enough to provide all the air necessary at the firing port at all times and deliver it at a pressure great enough to maintain a positive pressure condition in the combustion chamber. This made the heating condition in the combustion chamber much better than to be dependent on the stack pull to supply air, which would of necessity mean a pits of the same design, except that they will be fired with producer gas. The Donner Steel Co. soon will have a total of five recuperative pits fired with coke oven gas.

minus pressure in the heating chamber, such as is often found in regenerative pits. A slag pocket was located between the pit and recuperator to eliminate the troubles which frequently occur in regenerative pits when cinder runs through the bridgewall and flows into the checker chamber.

Since the firing and exhaust ports are located in the same end wall, a complete circulation of the gases through the combustion chamber is assured. An additional benefit is obtained by having the firing port above the top of the ingots, which effectively prevents the gases from coming in contact with the steel as soon as they enter the combustion chamber, thus insuring complete mixing and thorough combustion.



Longitudinal Section of Recuperative Soaking Pit

How Milling Cutters Are Reclaimed

BY C. B. YEOMANS

RECLAIMING of worn milling cutters and reamers by grinding is an interesting branch of abrasive engineering practice that calls for the exercise of considerable skill and ingenuity. The process, which consists of grinding in new teeth without annealing the tool, was introduced some twenty years ago. At that time the method was not always satisfactory as the only available wheels were not free cutting and they would not stand up on the corners when applied to the work.

The author is associated with Abrasive Co., Philadelphia.

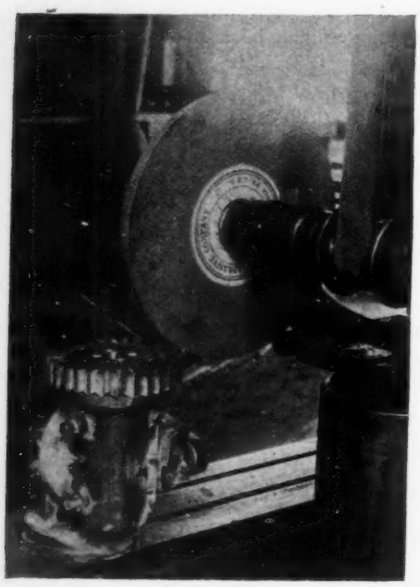


Fig. 1—Cutter sides are ground by locating work on a rotary magnetic chuck

The recutting of worn reamers and milling cutters today, however, is a simple problem involving but three principal factors: Cool cutting wheels, adequate equipment and skilled operators. A few large manufacturing plants recut milling cutters by grinding, but in general this work is left to shops operated solely for that purpose.

At the plant of the King Tool Grinding Co., Cleveland, a battery of modern grinding machines is kept constantly busy on tool re-grinding work. The first step in reclaiming cutters is to grind the peripheries. This is accomplished by mounting the cutter on an arbor which is placed between the centers of a cylindrical grinder. Sides of the cutter then are ground flat and true as shown in Fig. 1. As the illustration shows, the cutter is mounted on a rotary magnetic chuck while the wheel is fed back and forth over it. Just enough metal is removed to true up the sides. The wheel is manufactured alumina, 10 inches in diameter, ¾ inch face, 60 grit, J grade, vitrified bond. It is operated at a surface speed of 5000 feet per minute, and the work is handled dry.

The next step consists of cutting the teeth. The principle is exactly the same as followed in ordinary cutter making, except that an abrasive wheel is the cutting agent instead of a milling cutter. Fig. 2 shows a cutter arranged for cutting the side teeth. It is mounted on a compound head set to generate the necessary angle while the wheel face also is beveled. The remarkable feature of this operation is the ability of the wheel to stand up on the corner; a no mean problem for the wheel manufacturer to solve. The teeth are ground one at a time, the cutter being positioned by a guide finder as in ordinary cutter sharpening practice.

In cutting the peripherial teeth, the work is mounted on an arbor which is placed between centers. After the side and peripherial teeth are cut, they are sharpened by backing them off to generate the necessary cutting angles. Spiral cutters are reclaimed as readily as straight ones. Milling saws are recut by placing several on an arbor at once cutting to dimension.

Fig. 2—Cutter is mounted on compound head for recutting the side teeth

Advocates Foundry Iron Research

Recent Development of Superior Quality Castings Will Require High-Grade Pig Irons—Buyers Including Total Carbon Content in Specifications

By Richard Moldenke

SO FAR as the quality of the product is concerned, the history of the production of pig iron for foundry purposes is one of constant retrogression. The steps in this deterioration began with cold-blast charcoal pig iron, then anthracite iron, coke iron; then gradually warm to hot-blast coke iron, with the charcoal furnaces also heating their blast to get greater tonnages, and finally the present day hot-blast coke irons with scrap additions to the ordinary burden that, according to one European report, have reached 65 per cent.

Parallel with this quality retrogression is the enormous increase in furnace tonnages from about 15 tons daily to over 1000 tons per day in exceptional instances of modern practice. The key to this situation is economic pressure. The effect is a growing differentiation between furnace production for gray iron and malleable foundries and for the production of commercial steel. As the foundry is often compelled to draw upon the pig irons made for steel purposes, for economic reasons, whereas the steel industry does not draw upon foundry pig irons proper, the situation is resolving itself into one of grave consequence for the life of the gray-iron castings industry and hence the intensive present-day feeling in foundry circles for rigid specifications to govern the quality of pig irons sold for foundry use.

In the discussion of a paper on the use of scrap in the blast furnace held recently in the institute, a pertinent remark was made by one of the participating furnacemen, who confessed that "the things found wrong by the foundryman with his iron were beyond his depth." It may be added that those things are also beyond the depth of most foundrymen who, however, know from their results that they are getting poorer castings today with many pig irons than they did with those same brands in former years. Under the former fracture buying, the foundryman at least could select the strongest metal, as judged by the sledge, from various brands of similar fracture and pig section. With the advent of iron analysis, and in spite of the growing uniformity of the metal through greater tonnage production, furnace attention was diverted from quality production to obtaining greater yields of iron within a given analysis range.

How the foundryman had to meet this situation apart from setting his own house in order on the score of production practices, is best illustrated by the action of one prominent foundryman who took the entire output of two Southern cold-blast charcoal furnaces as long as they ran, no matter what their analyses were. By admixing a small percentage of this high-grade pig iron, which did not in the least affect the analysis of the rolls he made, he obtained for his product a much longer wear in service than others obtained who did not so improve their mixtures. The reason for this situation is what foundries and furnaces would like to know and is the best argument for a concerted drive for research on the part of both industries working together.

Furnace Reactions Cited

The smelting processes carried out in the blast furnace are supposed to be of a strictly reducing character. Ores are deprived of their oxygen to yield metallic iron and what manganese may be present. Similarly silica from fuel ash and ore gangue yields silicon in proportion to the temperatures existing, while carbon is taken up from the fuel by the melting iron sponge. Sulphur and phosphorus are accompanying unavoidable ingredients. If reduction has been complete, there should be no evidences of residual oxides, or even a reoxidation at the tuyeres. This is in contradistinction to the effect of all remelting processes, which are more or less oxidizing and, as used in foundries, in the production of castings, yield a product that exhibits somewhat different physical characteristics than metal poured into molds direct from the blast furnace even with the same composition in both instances. This has led to the term virgin metal given to pig iron from the blast furnace, whereas the remelted pig iron going into casings, sprues, etc., and finally ending in the scrap pile is called remelted stock. The proportioning of pig to scrap in foundry mixtures is one of the important elements in the production of castings with desired qualities, the same analysis with higher pig percentages giving softer castings as a general rule. The use of scrap to excess in the furnace, delivers metal having some of the characteristics of remelted stock to the foundry, and hence upsets the calculations of the foundryman in his own work.

When pig iron is used for steelmaking, whether by the bessemer, open-hearth or electric furnace process, a deliberate oxidation of the metal is effected to remove the carbon, etc. This leaves the metal so badly oxidized, however, that it must be deoxidized with silicon or manganese, and thus wind up with a reducing process. This is possible because of the high temperatures prevailing that are not attained in the ordinary foundry melting processes. It may not be essential for furnaces supplying the steel industry to aim for the high quality necessary for foundry purposes. But for the gray iron and malleable foundries, in which the molten metal cannot be given a deoxidizing finish with any degree of certainty, the pig irons used must not have been subjected to any oxidizing influences in the making at the furnaces for they get enough oxidization in the foundry melting operation later on. Although it should be the business of the foundryman to conduct his melting operation so that the smallest degree of oxidation takes place, for melting is all that he wants, it will be readily understood that the better the material he starts with, his own operations being normal, and under the best conditions possible, the better will be his product.

Until the time comes, therefore, when it is possible successfully to deoxidize molten foundry iron, pig

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From a paper presented at the New York meeting of the American Institute of Mining and Metallurgical engineers, Feb., 1927. The author, Richard Moldenke, is consulting metallurgist, Watchung, N. J.

irons must be able to stand enough of the unavoidable oxidation incident to normal foundry practice, to allow the making of satisfactory castings, if the foundry is to live. That many of the foundry pig irons of today will not fill this requirement is patent, and inquiry need only be made of manufacturing concerns processing the castings they purchase or make, to learn that without change in practice, results have become more irregular than ever before and can only be corrected by cutting out offending pig irons.

The ordinary analysis of cast iron does not tell the whole story by any means. The foundryman has no way of telling whether the furnace from which he may get some of his iron is running normal or working badly. The analysis will not tell him this unless it is complete enough and the separate determinations have been carried through accurately. Thus high sulphur and low total carbon will ordinarily show us an "off" iron. Furnaces, however, avoid carbon determinations if possible, and with the volumetric sulphur method, and the possible presence of such elements as copper, which influence this method seriously, the foundryman usually finds himself in trouble.

The time may come when a reported analysis will include oxygen of dissolved iron oxide and of occluded gases separately, nitrogen possibly hydrogen, surely chromium, copper, nickel, and many other elements present in small but appreciable quantities. The information gained from the study of catalytic action by small percentages of foreign material in a substance will eventually throw light upon the mystery of "iron without life" in the foundry. Why it is that oxidized iron freezes so quickly in spite of a high degree of superheat that may be available? There is much yet to learn on the question of a real analysis of pig and cast iron, and better knowledge on the subject will enable furnace and foundry to search for ways of avoiding troubles, or where possible to do this, to correct them.

The trend today is toward a specification of the total carbon content in pig irons. Formerly this was the exception and fixed only when it was essential that the irons be of the highest character for special purposes. It is well known that the normal total carbon content of any pig iron depends on the silicon content, the temperature and operation of the furnace, in lesser measure the content of the other elements, and doubtless other matters of furnace practice better known to the furnace operator. Would it not be wise, then, for the furnaces to study this question and settle, together with the foundrymen, a minimum for total carbon for given silicon ranges, so that there may be no eventual necessity of combatting freak specifications of this rather difficultly controlled element later?

Foundrymen should be willing to pay for well made pig irons. As a matter of fact, it will be found that wherever it is essential that pig irons made with more than enough coke, be used, there will be found a willingness to pay a reasonable premium for them. That this is the case may be seen from the continued production of charcoal pig irons, of the extending use of Mayari pig irons. Indeed it is to be hoped that furnaces will cater specially to discriminating foundrymen, and give them lines of pig iron specially suited to their requirements, such as irons for making piston rings, diesel engine cylinders and heads, or high-test cast iron for various purposes.

The recent developments in Germany in superior quality castings, particularly if the results obtained there can be duplicated with our pig irons, will call for extra quality in the pig irons and, strangely, that they be not only machine-cast but that they be chilled by water in addition. This may seem iconoclastic to the old-time foundryman, but looks much as if the machine casting of pig iron has not yet gone far enough.

May Improve Quality

INVESTIGATIONS by capable talent on the reoxidation of iron in the blast furnace as it passes the tuyere region have been overlooked in the past. The results of such a research may have a vital bearing on the desired quality of foundry pig irons. It would seem time for the technical side of the furnace development of the country to be organized into associated effort, so that this industry may benefit in similar manner as has that of the foundry. With these two interests doing effective research work, co-operation will inevitably result.

Changing Grinding Wheel Speeds

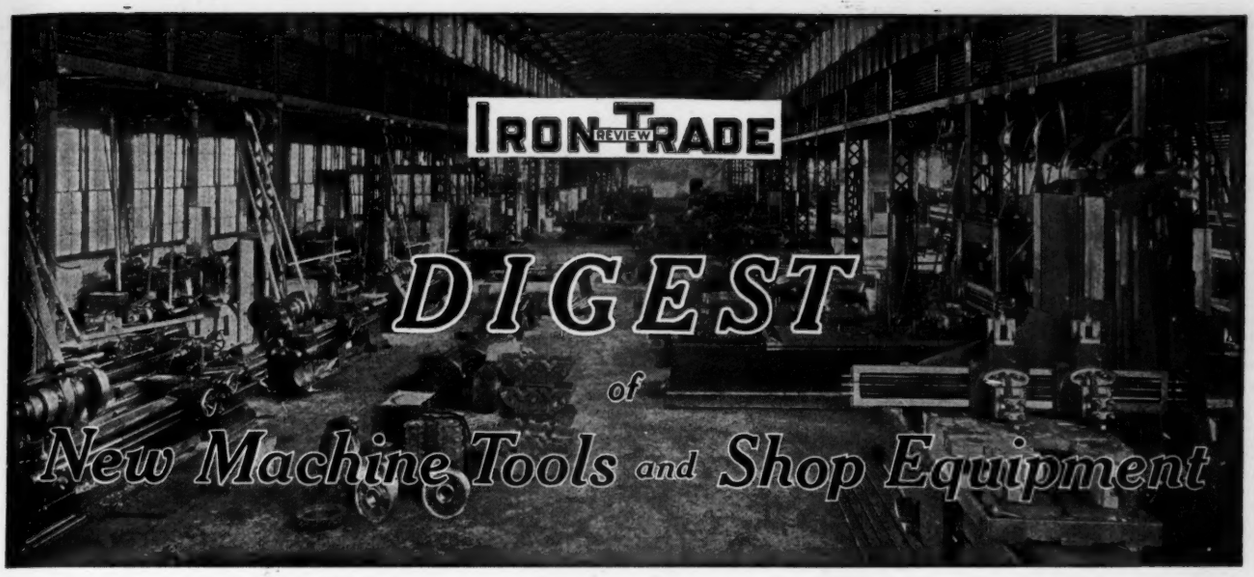
AN ORDINARY grinding wheel used on a cylindrical machine for production grinding should be operated at a peripheral travel of from 5000 to 6500 feet per minute. If a wheel appears hard and glazes this condition can be overcome by decreasing the wheel speed or increasing the work speed. On the other hand if the wheel acts soft the difficulty may be overcome by increasing the wheel speed or reducing the work speed.

The foregoing may be called the A B C of cylindrical grinding. The advantage of a high wheel speed is that it causes more grains of abrasive material to pass the work in a given time. Hence the cutting action is more effective. However, suppose the wheel speed is 6500 feet per minute and the wheel acts soft. The remedy is to reduce the work speed. Now as the traverse feed depends on the work speed, the minute the latter is cut down, the traverse is reduced also, and this means curtailed production. The other remedy is to increase the wheel speed.

Remedy for High Speeds

Suppose on the other hand the wheel at a speed of 6500 feet per minute glazes readily, the work speed being high. The remedy is of course to reduce the wheel speed. This is all very simple on paper, but when it comes to manipulating wheel speeds in the shop how is this to be done? Few cylindrical grinding machines on the market today have provision for increasing or decreasing the wheel speed by small increments. Generally two speeds only are provided.

From the foregoing it would appear that an excellent opportunity exists for grinding machine designers to equip their product with adequate means for controlling wheel speeds within reasonable limits. This might be brought about by variable speed motors or a mechanical speed changing device incorporated between the motor and the wheel spindle. It is a subject worthy of study.



Tool Shows Bring Out New Models

AUGUST will prove to be a record month in the introduction of new machine tools and shop equipment, for during the past 30 days tool builders have been placing final touches on models which are to be introduced at shows during the month. With practically every manufacturer of machine tools announcing new tools or redesigned tools and with three major expositions of metalworking equipment scheduled for September, it would appear that American industry is becoming "machine tool minded."

There can be little doubt but that a portion of the slump in sales of machine tools during recent months can be assigned to the coming exhibits. Whether the prospective buyer operates a one-man machine shop or whether he is the representative of a large manufacturing interest, he is most likely to postpone his purchase if at all possible until after the latest models have been announced and displayed. Automobile sales have declined just before annual shows are held and they will continue to do so long as shows are conducted. On the other hand, sales of motor cars increase materially after the shows are over, thus it is to be expected that the present dullness in machine tool buying, will be more than offset by greatly accelerated bookings in the last quarter of the year.

Never in the history of American industry have machine tools been given the attention they will receive this month. As this review goes to press, a Steel and Power Show is in progress at the University of Toronto Arena, Toronto. The exhibition is being held during the Canadian National Exhibition and is sponsored by a group of Canadian technical societies which are co-operating in the interests of the Dominion's metalworking industry. Exhibitors total over 100 and 50,000 square feet of floor space is being used. Machine tools and machinery constitute much of the equipment on display. The dates of the show were Aug. 31-Sept. 2.

On Sept. 6 the New Haven Machine Tool exhibit in Mason laboratory of Yale university, New Haven, Conn., opens its doors and will remain open until Sept. 9. Since 1921, this show has been conducted and last year reached proportions which filled all available space. This year all space has been engaged by the 50 exhibitors who will show the latest machine tool equipment in operation. This exhibit affords to New England an opportunity to keep abreast with the changing designs. According to a decision recently announced, it will not be held in 1928, but beginning with 1929 will be placed on a biannual basis.

During the week of Sept. 19-23, two major expositions will attract machine tool users the country over. In Cleveland the National Machine Tool Builders' association will conduct its first National Machine Tool Builders' exposition and will occupy the entire annex of the Public Auditorium. So great was the demand for space that it was necessary to provide additional area under a canopy. A feature of this exposition is that it will be that admission will be given only to those having a reasonable interest in machine tools.

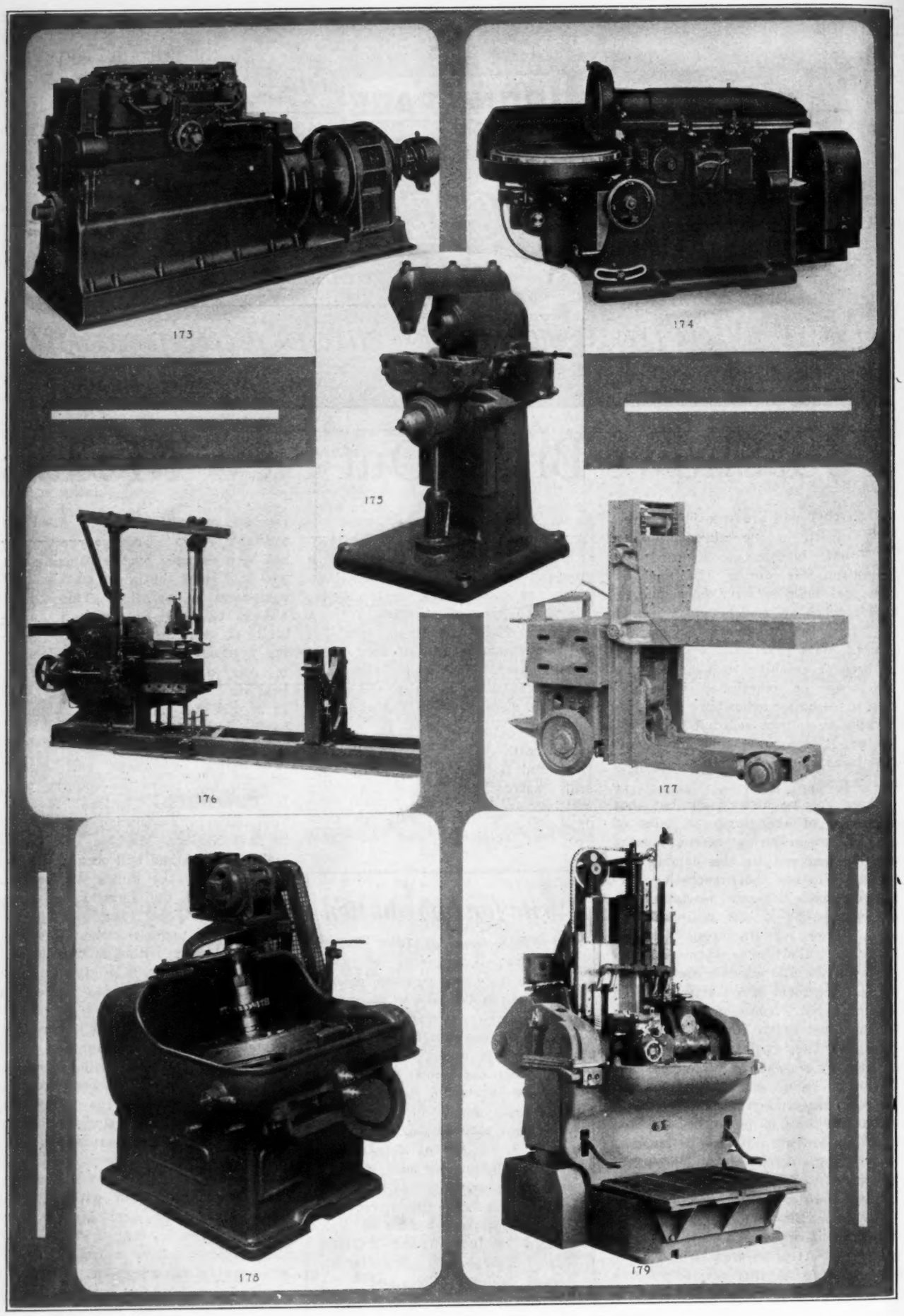
Because it is the first show that the association has attempted and because the attendance will be limited, considerable interest has been created. Probably this will be the most comprehensive display of equipment ever assembled in the United States.

Originally, it was the intention of the association to conduct the exposition without tying in with it technical sessions or meetings. It now appears, however, that the leaders of the industry believe a technical program to be advantageous, for within the last few days has been announced

(*Concluded on Page* 550)

Write for Information

IN THIS issue of IRON TRADE REVIEW, *descriptions of new machine tools and shop equipment introduced in August are described without any reference to the names of manufacturers. The equipment is announced and described for the benefit of readers who are interested in new machine tools and shop equipment. Names and addresses of the manufacturers, as well as detailed information regarding each item of equipment, are kept on file and will be furnished upon request. Communications should be addressed to* IRON TRADE REVIEW, *New Equipment Department, Penton building, Cleveland.*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Smaller Diesel Engines Meet Popular Demand

No. 173

To meet the demand for small-size diesel engines, a manufacturer is introducing a number of higher-speed, lighter-weight units in ratings from 30 to 180 horsepower. The fuel oil is injected into the combustion space above the cylinder proper by a plunger pump driven by a cam mounted on a shaft running along the side of the engine about half way up. This shaft is driven by gears from the main crankshaft. A pump is required for each cylinder. The fuel is sprayed through the nozzle located at the top of the cylinder and the injection is timed so that it enters the combustion chamber at about the time the piston reaches the top of its stroke. When the fuel in the combustion chamber above the cylinder proper is ignited by the heat of the highly compressed air, the fuel charge begins to burn and the burning gases expand out into the cylinder, driving the piston down. This combustion is not rapid, thus the action of the engine is comparable to that of the steam engine.

Surface Grinder Handles Large Size Work

No. 174

For surface grinding large work to a close degree of accuracy and good finish, the machine in the illustration has been designed. It can be equipped with magnetic chucks from 16 to 30 inches diameter and in all cases there is a small additional swing inside the pan which often can be used to good advantage on certain shapes of work. The machine is self-contained and fully-motor driven. The chuck is driven by a variable-speed motor, being started and stopped by push-button control. A dynamic brake is provided. The wheel is reciprocated hydraulically, giving unlimited speeds between the maximum and minimum. All sizes of chucks up to and including the 24-inch size can be equipped with a micrometer diamond which furnishes the operator a means of duplicating the thickness of the work conveniently.

Brings Out Machine for Burnishing of Gears

No. 175

The function of this new machine is to burnish gears. In the illustration, the machine is in the running position. By raising the handle, the device which holds the two lower gears is tipped slightly to the right to the unloading position. The machine requires three arbors and three master gears, one driving and two driven, but these are not furnished unless requested. The illustration shows solid bearings for the two carriage arbors, however, bronze bushings or ball bearings can be supplied. The operator places the gears in position between the master gears and pushes the lever down which brings the gear into engagement with the driving burnishing gear. Throwing the control switch starts the machine in the forward direction and after it has made a predetermined number of revolutions, the spindle is reversed and makes the same number of revolutions in the opposite direction. It then stops automatically.

Draw-Cut Shaper Is Used for Roll Finishing

No. 176

This combined heavy-duty, draw-cut and roll wabble shaper has been designed for shops manufacturing rolls or those using rolling mill equipment where there are only a few rolls to be machined but considerable heavy-duty shaping and planing work. It will machine the ends of any type or length of roll up to 56 inches diameter and neck of 28 inches. It has 48 inches of cutting stroke, 18 inches vertical feed, and can be furnished with 36, 48 or 60 inches of horizontal feed on the crossrail. General construction and operation of the machine are similar to other heavy-duty draw-cut shapers made by the same company. For cutting pods in rolls, the tool is quickly converted from draw-cut to push-cut.

Elevating Platform Truck of Sturdy Build

No. 177

A manufacturer of electric industrial trucks has added to its line a 3-ton, high-lift elevating truck of most sturdy construction. The elevating platform is raised and lowered by a 1½-inch roller chain passing over a power-driven sprocket at the bottom and an idler sprocket at the top. The hoisting motor is connected to the spur gear pinion through a spring ratchet, so arranged that a positive drive is obtained when raising the elevating platform. A speed of 7½ feet per minute is obtained when lifting a full load and a speed of 19 feet per minute when raising the empty platform. Lowering speed is 19 feet per minute loaded or empty.

New Milling Machine Is of the Offset Type

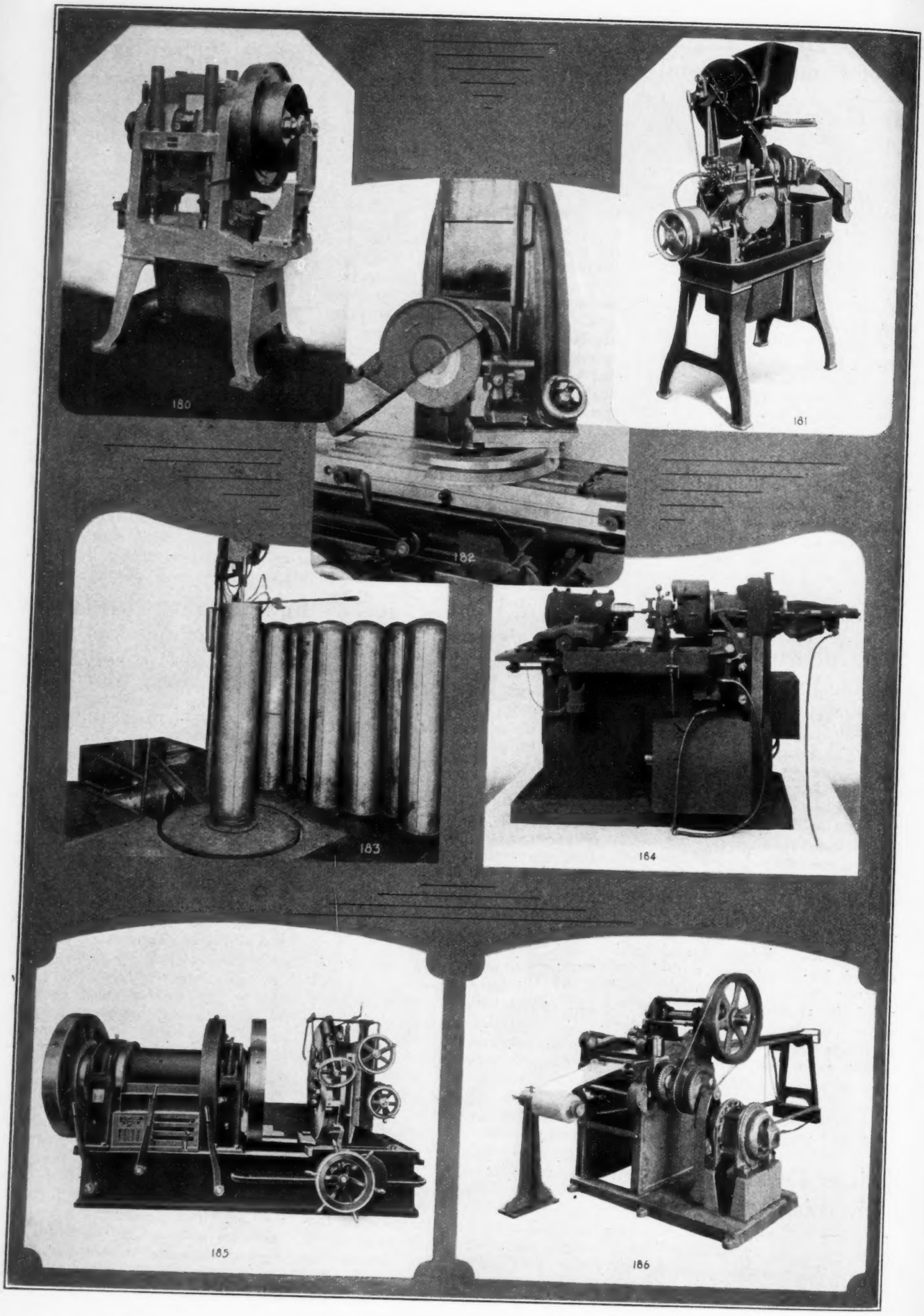
No. 178

For such operations as face or straddle milling of small parts; milling of flats, slots and saw cuts; and similar forms of offset milling, this machine is newly designed. The production advantage of the offset process is that a number of parts are under cut simultaneously. The machine consists of a tilted circular table in which is a large center hole and a spindle mounted beneath and at right angles to the working surface of the table. A 4-inch offset adjustment is provided for the table so that the center line of the table and of the spindle coincide for the removal of the circular or hollow circular work holding fixtures or the center lines may be offset the distance required to obtain the proper depth of cut. The table is 30 inches diameter and is mounted in a tilted position to shed the 40 gallons per minute of coolant without splashing outward and to wash away the chips and prevent their accumulation on the table and fixture.

Finishes Flat Surfaces by Broaching Method

No. 179

A new broaching machine has been designed for finishing flat or irregular surfaces by broaching in place of milling. With the tool one or more surfaces are roughed and finished in one operation and it is said that the cut can be held within unusually close limits. Unlike the teeth of a milling cutter, which make both roughing and finishing cuts, the lower teeth on the broach always do the roughing work and the upper teeth are reserved to make the lighter finish cuts. The machine consists of a base with two uprights. Slides to which cases holding the broaches are bolted, operate alternately up and down on the ways of these uprights. The slides counterbalance each other and as one moves up, the other moves down. In front of each slide is a tip-up fixture for holding the part which is being machined. When the slide is at the bottom of the stroke, the fixture is in a horizontal position and the piece to be machined is placed in it while the slide moves up. With the work in place, a lever is tripped and the fixture is tipped to an upright position. The slide moves down and the piece is broached, the fixture being automatically thrown back into the horizontal position for unloading and reloading.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Builds Blanking Presses and Bolt Machines

No. 180

A new line of four-post, high speed blanking presses just announced incorporate many features making for high production and ease of operation. These machines, one of which is shown in the illustration, are equally adaptable for blanking from strip or for cutting or forming with follow tools. Three standard sizes are available, namely, 20, 40 and 60 tons. The presses are regularly furnished with double roll feeds, scrap shear, flat bottom punch holder in gate, heavy bolster, double eccentric connection with simultaneous adjustments and stock guides.

This manufacturer also has developed an automatic bolt head trimming machine which features a complete separation of chips and trimmed blanks; higher speed; positive ejection of all trimmed blanks through the die; ability to trim any length without special tooling; newly designed hopper feed; and improved transfer mechanism for carrying the blanks from the feed chute to the tools.

Another new machine designed by this manufacturer is an automatic machine for pointing and cutting threads on bolts. The pointing is done with a box tool and the threading with a standard die head. The machine has a capacity for ⅜-inch diameter bolts, ¾ to 6 inches long under the head.

Automatic Nut Threader of High Production

No. 181

A new automatic nut threading machine of the continuous tapper type incorporates a new style registering device for presenting the nuts to the tapping jaws which turn the nut over the stationary tap. It has capacity for tapping hexagon or square hot-pressed, cold punched, or brass nuts from 9/16-inch U.S.S. to 7/8-inch S.A.E., special tooling being provided for intervening sizes. A production speed of 15 U.S.S. nuts and ten S.A.E. nuts a minute is recommended, although it is claimed on test the unit has tapped eighteen ¾-inch U.S.S. nuts a minute and over. The machine is equipped with ball bearings and all bearings and gears are enclosed and run in oil. The threader is equipped with a single clutch pulley drive and an automatic safety clutch throw to stop the machine in case the feeding machanism becomes clogged, thus eliminating any chance of breakage, either of the machine or taps. The feed hopper is of an entirely new design of the rotary drum design.

Device Shapes Surfaces of Grinding Wheels

No. 182

A recently developed attachment for use on a surface grinding machine is a radius and angular wheel truing unit. The device on the opposite page shows the setup for shaping a radial contour on the periphery of a wheel. The slide is clamped in position and then swiveled through an arc sufficient to develop the full outline. The diamond point is set in the correct position by the diamond tool setting gage.

Carbon Arc Tank Welder Is Made Automatic

No. 183

A new carbon arc automatic welding machine has been designed for the purpose of welding bottom seams on cylindrical tanks. The equipment is standardized for tanks up to 6 feet diameter and 8 feet high. Special equipment may be furnished to handle any diameter or length of tank. On 14-gage material a lap head seam has been welded at the rate of 135 feet an hour. The edge weld, used on the bottom of some types of range boilers, may be welded at the rate of 150 feet an hour, as the bottom is flanged and fitted so that the edges are together and flush with each other. Tanks, which are to have the bottom seams welded, are set on a revolving table and the arm carrying the welding head is adjusted to bring the arc on the seam.

Introduces Two Internal Grinding Machines

No. 184

Many improvements and features have been incorporated in a new small model internal grinding machine designed to meet the demand of manufacturers for a short base machine handling work under 2 inches long such as ball races, rings, gears, etc. The base is designed with both ends cast straight down from the ends of the ways to a foot which has been made wider and cupped shaped. This serves as a reservoir to catch any coolant that may escape the guards. The distance from the floor to the center of the work spindle is 44 inches. The work head has one speed. Single or multiple speed belt drive is furnished. The same company also is marketing a duplex internal grinding machine for handling work that requires the grinding of two opposite holes in accurate alignment. The general construction consists of a base casting on which are two main tables carrying the wheelheads without crosswise movement. A cross-slide carries the work head and fixture and the diamonds for truing the wheel. All moving parts run in antifriction bearings.

Pipe Threading Machine Covers Wide Range

No. 185

A pipe threading and cutting off machine with one die head and one set of chasers, covering a range from 8 to 16 inches inclusive, recently was placed on the market. The travel of the carriage is 25 inches. It has eight speeds. The driving pulley is 18 inches diameter and takes an 8-inch belt. The belt-driven machine weighs 16,900 pounds and the motor-driven unit 18,000 pounds. The unit has the gear box located beneath the main spindle. All gears are of steel and are run in an oil bath. The shaft bearings are lubricated by a force feed system. The front and rear 3-jaw gripping chucks have universal adjustment, the rear chucks being equipped with grips for screwing flanges and collars on and off. The cross rail supports the die head; the rear is fitted with centering jaws, cutting off tool and reaming tool.

Sheet Roller Leveler Is of New Design

No. 186

A new type sheet roller leveling machine recently was brought out. The unit is equipped with an automatic cut off shear and delivery table. The machine shown on the opposite page is equipped with 12 special high-carbon steel rolls. The six lower rolls are driven through cut steel gears. The six upper rolls are mounted in a unit head which is adjustable at the feed and delivery end. The first and last upper rolls can be adjusted individually. All upper rolls are driven by two hardened roller chains. The shear is of the standard flywheel type. An electric switch and solenoid automatically starts the shearing cycle. A 5-horsepower motor drives the leveling rolls and shear. All the lower roll shaft bearings are oiled automatically with one stroke of a pressure pump. The machine will deliver the stock at a speed of about 75 feet a minute.

Generates Spiral Gears with Single Tool

No. 187

Recently developed machines include a unit for generating large spiral bevel gears with a single planing tool. It has capacity for gears up to 60 inches diameter with a 10 : 1 ratio and up to 42 inches diameter with a 1 : 1 ratio. The spiral angle of the teeth may be varied up to 30 degrees. Index change gears are provided for numbers of teeth from 12 to 180. Inspection of gear tooth spacing is made conveniently by a tester recently developed by the same concern. It recently marketed a 12-inch cutter grinder for the sharpening of spiral bevel and hypoid gear cutters; and, a straight bevel gear generator which develops the tooth contour by relatively rolling the work and the tools at a uniform pitch line velocity.

Air Compressors Feature Flexible Belt Drive

No. 188

A line of horizontal, double-acting air compressors is featuring a new drive which permits the use of short centers on belt-driven units. The means of driving is through numerous flexible V-shaped rubber fabric belts which operate in grooved sheaves. The advantage of this drive is that it permits the use of short centers and the absence of slippage. The motor may be set up immediately ahead of and in close proximity to the frame of the compressor; and where space is extremely limited, the motor is mounted on the compressor frame.

Traveling Head Slotter Is Made Universal

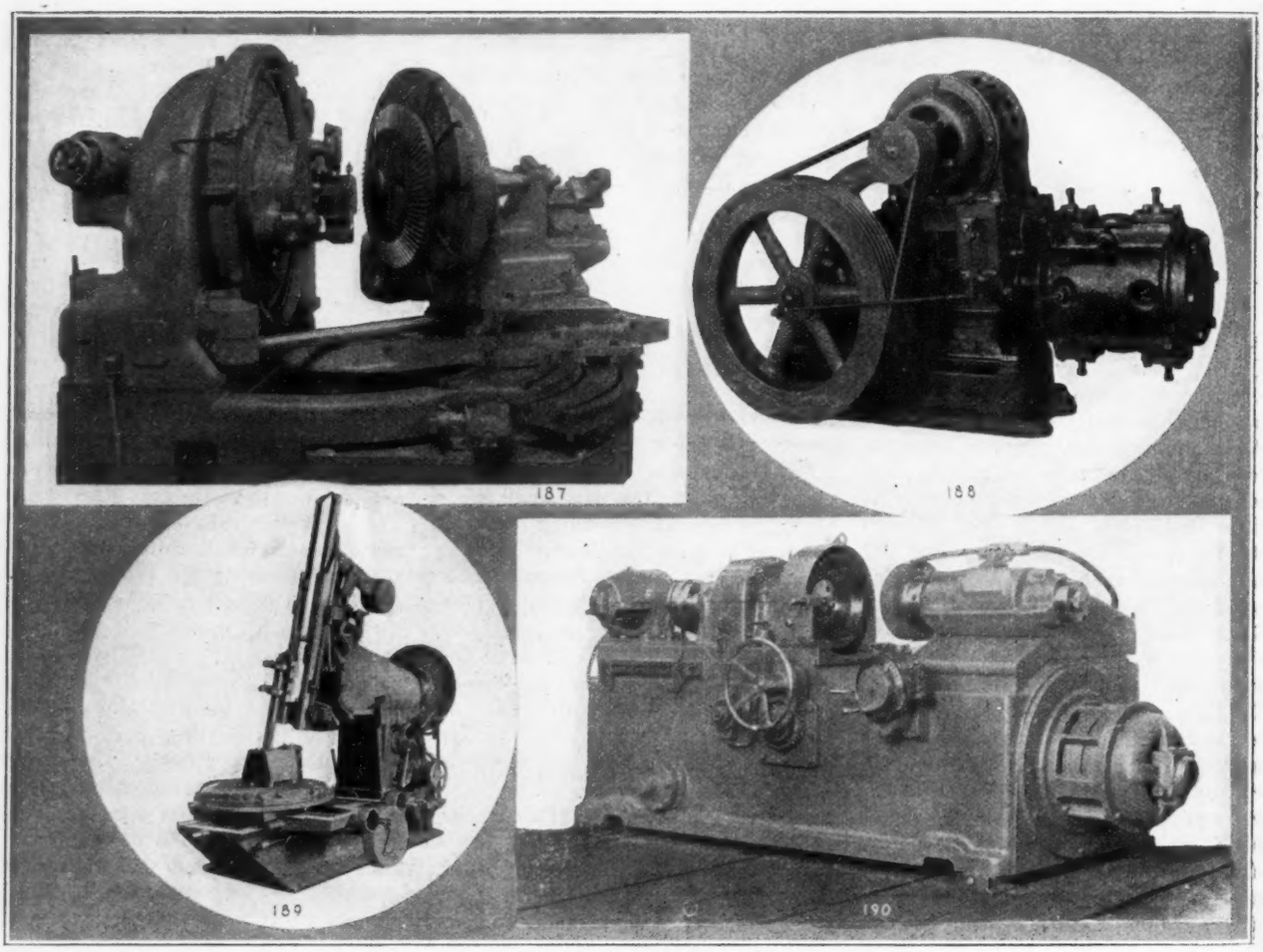
No. 189

An angle cutting head adapted to a traveling head slotter recently was designed to permit a 15 per cent adjustment of the cutter head on each side from center, thus making the slotter universal. The angle cutting head with the ram and ram guide forms a separate unit. Adjustments of the cutting head are obtained through a worm secured by brackets to the traveling head and a worm rack bolted to the angle adjusting head. The cutting head is indexed in degrees and a dial indexed in minutes is placed on the worm angle adjusting shaft. The ram guide is fitted with taper gibs in top and bottom which prevents springing when the cutting thrust is against the gib side. The angle cutting head makes the machine adaptable for the machining of angular surfaces at one setting.

Automobile Brake Drums Finished by Grinding

No. 190

Finishing brake drums by grinding has been made possible by the development of a new machine designed for this purpose. A 30-horsepower motor is built into the machine. The grinding wheel is 14-inch diameter with a 3-inch face. The work is held on a heavy face plate by instantaneously operated air chucks. Dead stop sizing on the grinding wheel infeed is facilitated by a dial gage. The 2-horsepower work head motor is controlled by a rheostat; starting and stopping of the work rotation is by push button control. The work rotation is stopped instantaneously by a dynamic brake. The work saddle is provided with an adjustable dead stop to facilitate positioning of the work in relation to the grinding wheel. The machine is entirely electrically controlled and is so designed that every possible idle movement consuming unproductive time has been stimulated. Considering the normal shop delays and the loading and unloading of the work, an estimate of floor to floor time is 40 drums an hour.



Editorials

Labor's Lot in Steel Grows Easier
New Conditions Demand New Codes
Exports Help Level Off Production Curves
First Half Ferroalloy Report Good
Corporation, Independents in Step

Steelworkers' Position Vastly Improved

AN INCREASE of 82 per cent in full-time weekly earnings of workers in the iron and steel industry, and a reduction of 18 per cent in their working hours per week, from 1913 to 1926. This is a boiled-down summary of improvement in conditions in the industry as disclosed by the bureau of labor statistics.

The bureau studied ten departments of the industry: Blast furnaces, bessemer converters, open-hearth furnaces, tin plate mills, sheet mills, standard rail mills, bar mills, plate mills, blooming mills and puddling mills. Each shows a large increase in weekly earnings for employes and a substantial reduction in the number of hours.

The average of their earnings per hour increased 112 per cent over 1913. Earnings per hour, as shown by the data obtained in 1926, are 64 cents, while full-time weekly earnings amount to $34.41. These averages are stated to be fairly representative of the 399,914 wage earners in the iron and steel industry. Their hourly earnings are 14 per cent below the 1920 peak, and full-time weekly earnings approximately 25 per cent lower than in 1920.

The shortest number of hours per week are found in the tin plate mills, averaging 48.1, and sheet mills, with 48.9. Blast furnaces have an average of 59.8, and open-hearth furnaces 57.1. Other departments range around 55 hours per week, except puddling mills with 52.1 hours. The bureau's report leaves no doubt as to the improved situation of all workers in respect to time and money.

Ferroalloy Production in Good Gain

WITH few exceptions, production of pig iron and ferroalloys in the first half of 1927 ran true to form. According to statistics announced a week ago by the American Iron and Steel institute, the total production ran 2.24 per cent behind the first half of 1926. Basic iron dropped 2.91 per cent, foundry 4.33 per cent, malleable 3.34 per cent, and forge 4.34 per cent. Bessemer was the sole grade to show improvement, this amounting to but 0.02 per cent. Bessemer steel ingots in the first half of this year declined 2.52 per cent and as closely as can be determined electric steel ingots made but little increase, thus it is evident that the bessemer pig iron was used in making acid steel castings.

Charcoal pig iron increased 9.94 per cent over the first six months of 1926, but the total output was only 85,052 tons, consequently the upturn is of no special significance. All ferroalloys registered a gain of 29,139 tons or 8.65 per cent. This is accounted for by an increased domestic production for use in alloy steel manufacture and a decrease of imports. Figures compiled by IRON TRADE REVIEW reveal that spiegeleisen, ferromanganese and all other alloys made by coke fuel in the first half of this year increased 35,382 tons, or 17.4 per cent over the corresponding period of last year, while figures prepared by the government showed imports of ferromanganese alone to have narrowed down 10,761 tons.

Building Codes Must Not Lag

THOSE who produce, sell and fabricate reinforcing steel bars and stuctural steel will be interested in the campaign the Western Society of Engineers is waging to induce municipal governments to amend their building codes in the light of newer engineering knowledge. The intent is to permit the use of materials and of methods which engineers and architects feel certain are safe and progressive.

In most cities streets are being widened and improved. In such instances the simple narrow street makes way for a new type of city thoroughfare, and in some cities double-deck streets are being promoted and built. This makes a change in the type of city office buildings inevitable. The argument is that the requirements of a building code should be set down by engineers and architects rather than by those who

have little practical knowledge of requirements.

The campaign by the Western Society of Engineers to reform codes that make for antiquated building practices undoubtedly will have the support of all those who furnish materials for and participate in the building industry.

Balance in Production Maintained

INCREASES in 1926 in the production of pig iron and ferroalloys, steel ingots and castings, and all finished rolled products were shared by the United States Steel Corp. and independent producers in such manner as to maintain the balance between them.

The Corporation's proportion of pig iron and ferroalloy tonnage last year was 39.9 per cent, compared with 40.3 per cent in 1925. For five successive years the Corporation's pig iron and ferroalloy percentage has shown fractional losses.

As to steel ingots and castings, the figures of the American Iron and Steel institute credit the Corporation with 42 per cent, against 41.6 per cent in 1925. In finished rolled products the Corporation also registered a slight gain, its percentage standing at 38.9 in 1926 compared with 38.4 the year preceding.

Reviewing these three major classifications over the span of the last five years, a remarkable degree of stability becomes evident. In this period the highest percentage in any classification has been 45.2 and the lowest 38.4. It is interesting to note that in 1901—the first year of the Corporation—it accounted for 43.2 per cent of pig iron and ferroalloys, 65.7 per cent of steel ingots and castings and 50.1 per cent of finished rolled products.

Foreign Trade Gains Are Held

IN SPITE of the apathy induced by an expansive domestic market and the lack of an exporting tradition, with its accompanying banking and trade affiliations and shipping support of long standing, which is a big asset to some European competitors, the United States is more than holding its own in the export market.

A department of commerce analysis reveals that in the fiscal year 1927 exports of $4,968,000,000 in merchandise represented an excess of $716,000,000 over imports. This favorable balance was two and one half times the $289,000,000 of the preceding year and compares with an average balance of $477,000,000 for 1910-14.

A large increase in shipments of crude foodstuffs and moderate gains in semi-manufactured and finished manufactured goods enabled the fiscal year 1927 to run export trade to the highest total since 1921. Imports in 1927 were smaller than in 1926, due chiefly to the shrinkage in the price of crude rubber. Were allowance to be made for fluctuations in price levels, it would appear that the fiscal year 1927 set a record in the actual quantity of both exports and imports.

Gratifying as this report is, the need for continued intensive work in stimulating an export consciousness, especially in the interior manufacturing districts, is not lessened. The larger the exports of any one industrial group the more assurance there is of stability. Seasons and consumption vary throughout the world and as the number of outlets broaden the fluctuations in production are minimized. It may be that the current moderate shrinkage in domestic demand may further emphasize the value of export trade.

What Our Readers Are Thinking

Iron Ore Opportunities in Texas

To the Editor:

DEVELOPMENT of the rich eastern Texas iron ore fields in the near future has become a significant possibility. Several surveys to determine the extent of the deposits and their accessibility have been made recently, and in at least one case an option on ore land has been taken by a group of capitalists with a view to shipping and marketing the ore in Birmingham and Philadelphia, an undertaking which has proved profitable.

In the summer of 1913, the East Texas Brown Iron Ore Co., whose holdings in Marion, Cass and Morris counties total about 30,000 acres, shipped two cargoes of iron ore to steelworks furnaces in Pennsylvania. The ore showed a content of 57.45 and 56.03 per cent metallic iron, respectively. All expense in connection with the mining, freighting and shipping of the ore totaled $18,954.31. The ore brought $22,226.25 at the furnaces, leaving a net profit of $3,271.94, or about 62 cents a ton.

The holdings of this company alone which make up a very small per cent of the entire iron ore belt of East Texas, are estimated at more than 100,000,000 tons.

From time to time in the years following the Civil war, and even as late as 1907 or 1908, attempts have been made to work blast furnaces in East Texas. These attempts met with failure, due chiefly to their smallness.

It is believed, however, that a furnace of efficient size could be successfully operated in this part of Texas, getting its ore from East Texas, its coal from Oklahoma or Alabama and its limestone from Louisiana, Arkansas and Texas. The problem of coke may be solved in another way. East Texas has lignite deposits of almost limitless extent. This substance heretofore has been considered impractical for use in connection with ore reduction because of the peculiar manner in which it breaks down when exposed to the air. However, a new process for retorting lignite and converting it into a lignite char which has two and one-half times the breaking strength of charcoal has been involved by a Dallas chemist. Whether this process has been perfected sufficiently to permit of its use on a large scale has not been determined.—JOHN H. PURNELL, *East Texas Chamber of Commerce.*
Longview, Texas, Aug. 19, 1927.

IRON TRADE REVIEW

Volume 81 Number 9 — Published Every Thursday

C. J. STARK, Editor. E. L. SHANER, Managing Editor. J. D. PEASE, Advertising Director. F. F. LIGHT, Circulation Manager.

Grim Humor in Safety Work. Page 493.

THE next issue of IRON TRADE REVIEW will contain complete information regarding National Metal Week in Detroit, Sept. 19-23. Four of the leading technical associations interested in metals will meet in the city that week: American Society for Steel Treating, American Welding society, Institute of Metals, and the production group of the Society of Automotive Engineers. The ninth annual National Steel and Machine Tool Exposition will be held in Convention hall, with 300 exhibitors and 93,000 square feet of floor space.

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IRON TRADE REVIEW is published by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulation; Associated Business Papers Inc.; and National Publishers Association. Branch offices: 475 Main street, Cambridge, Mass.; 1147 People's Gas Bldg., Chicago; 209 Edwards Bldg., Cincinnati; 2203-2206 No. 220 Broadway, New York; 2148-49 Oliver Bldg., Pittsburgh; 24 California street, San Francisco; 1653 Pennsylvania avenue, Washington. Foreign offices: Prince's Chambers, Birmingham, Eng.; Caxton House, Westminster S. W. 1, London; 9 Rue de Londres, Paris, France; Wilhelmstrasse 114, Berlin, S. W. 48; Germany, Cable address: *PENTON*, Cleveland; *IROTRAPEN*, London. Terms: Subscription in United States, Cuba and Mexico, $6 per year; in Canada, $8.50 per year and in Great Britain and other countries, £2:0:0 per year. *Entered at the Postoffice at Cleveland as Second Class Matter.* *Copyright 1927 by the Penton Publishing Co.*

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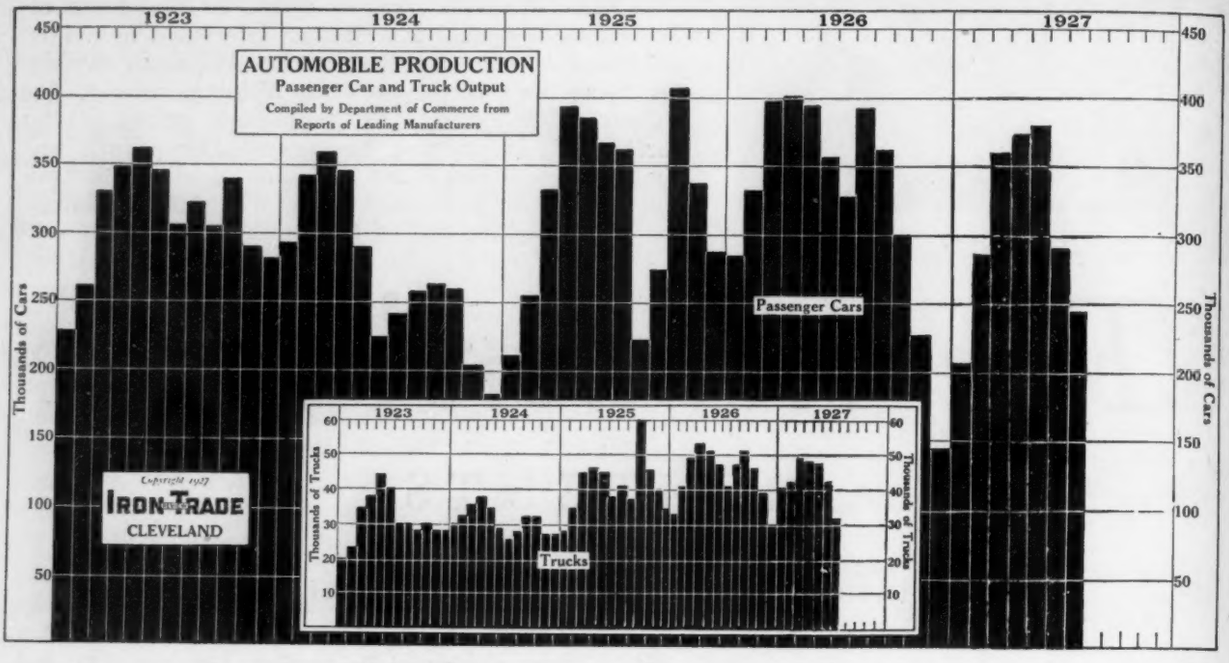
The Business Trend



Motor Car Output Lags

By JOHN W. HILL, Financial Editor

NO SINGLE factor in the immediate business prospect appears of such consequence and to be surrounded with such uncertainty as that of the automobile industry. And the overbalancing influence in the motor car trade involves, as it has for some months, the next move by Ford. Meanwhile, there is a lagging in the general output of cars which is being reflected in numerous other lines, steel in particular.

IN JULY the production of automobiles and trucks declined sharply both from that of June, 1927, and July, 1926. The total for the month was 274,300 passenger cars and trucks in the United States and Canada. This was a decrease of 16 per cent from the total for the preceding month and one of 25 per cent from one year before.

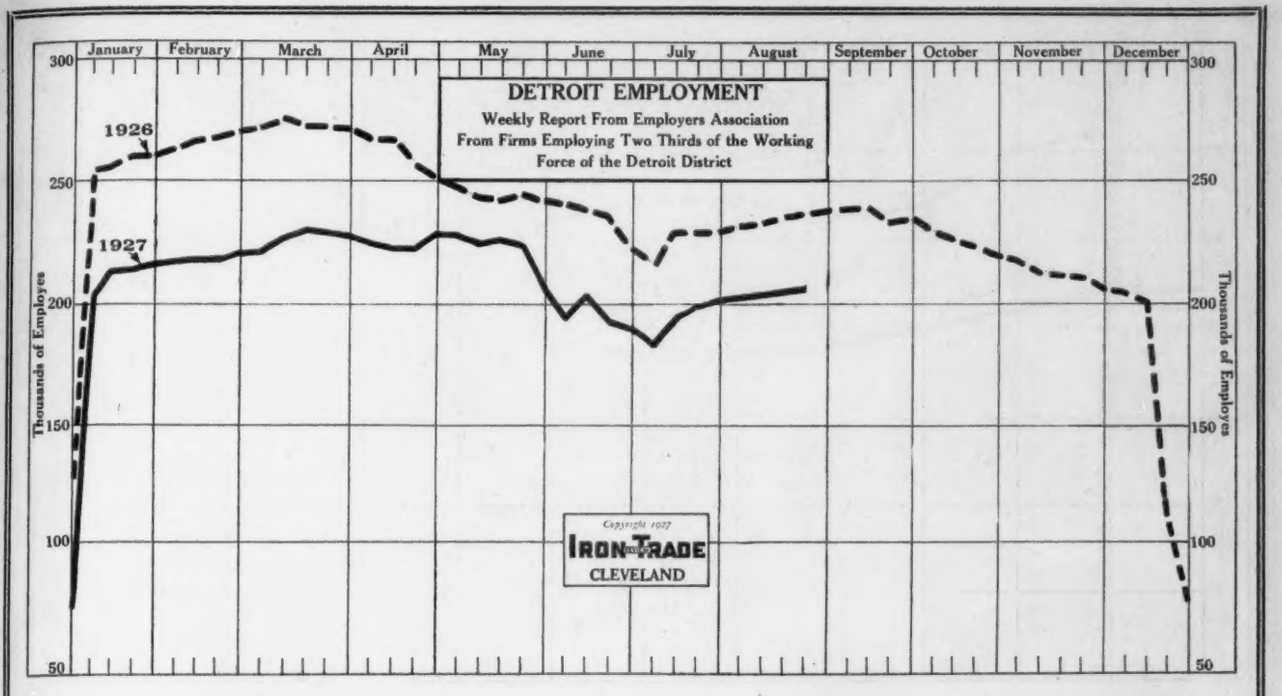
FOR the first seven months of the year the industry produced 2,427,000 cars and trucks in this country and in plants in the Dominion of Canada. This was nearly 14 per cent below the total for the corresponding period of 1926 and 7 per cent below those months in 1925. Passenger car production for the seven months fell off 15.7 per cent while truck output dropped only 2 per cent.

WITH automobile production running one-fourth below that of one year ago, the outlook is for a smaller automobile year than that of 1926. The Ford enigma continues to puzzle business forecasters. Ford's delay in introducing a new model is believed to have spread uncertainty generally throughout the trade. Many buyers have been waiting.

A LIMITED few producers, however, have benefitted from Ford's absence from the market, some of them doing a volume that would have been unlikely otherwise. Just when the Ford uncertainty will be removed is itself uncertain. Probably the new car will be introduced early in September, but many doubt that the company will be ready for large production schedules before late in the Autumn.

THE fact that only a few automobile companies are benefitting from the situation created by Ford is seen by the showing of profits for the first half. A few leading manufacturers are reporting good earnings, but the majority are showing declines compared with 1926. Aggregate net income for the first half of nearly 20 companies, not including General Motors, was more than 20 per cent less than in the like period of 1926.

The Business Trend

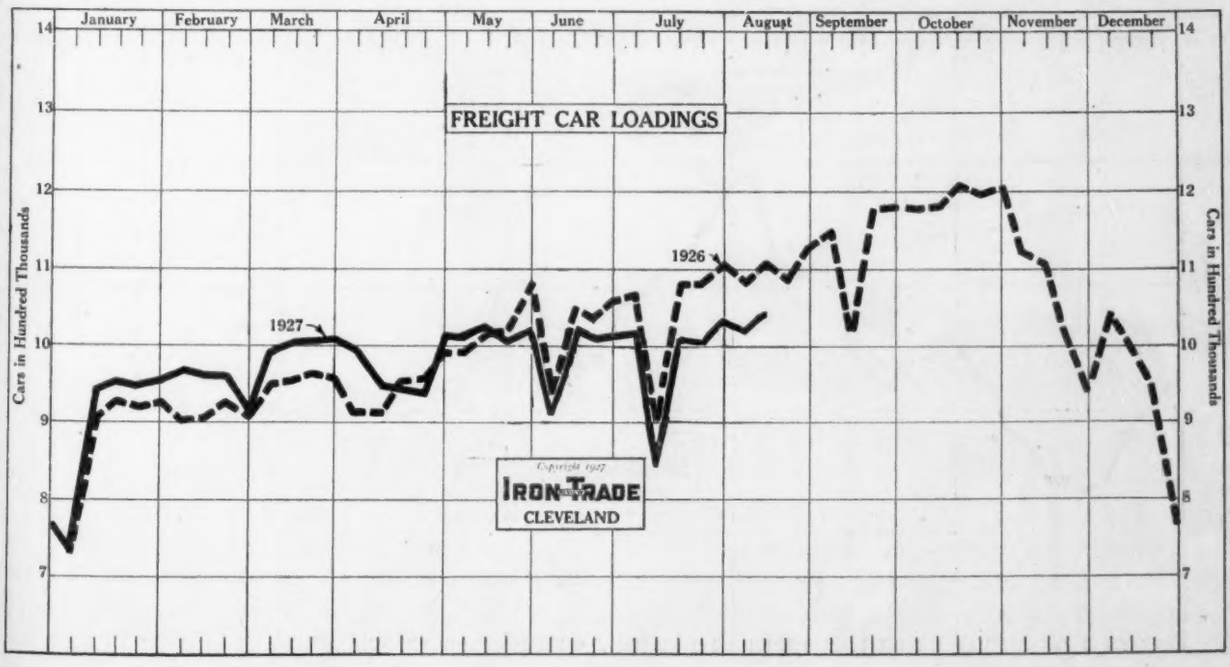


Detroit Employment

EMPLOYMENT in the Detroit district has been running below that of 1926 throughout the present year. The low point was reached in the first week of July. Since that date there has been a gradual improvement. This reflects a gradual gain in operations at automobile plants, although conditions continue uncertain and slow due to failure of Ford to appear with the new model. For last week employment in the district was 206,074, an increase of 1065 over the preceding week.

Freight Car Loadings

FREIGHT car movements continue definitely under the level of one year ago. For the week ending Aug. 13, carloadings stood at 1,049,000 compared with 1,024,000 for the preceding week and 1,089,000 in the corresponding week of 1926. The chief decline from one year ago has been in coal movements due to the strike in the union districts. However, movements of grain, ore and miscellaneous products are lower also. The general level of trade is below that of one year ago.



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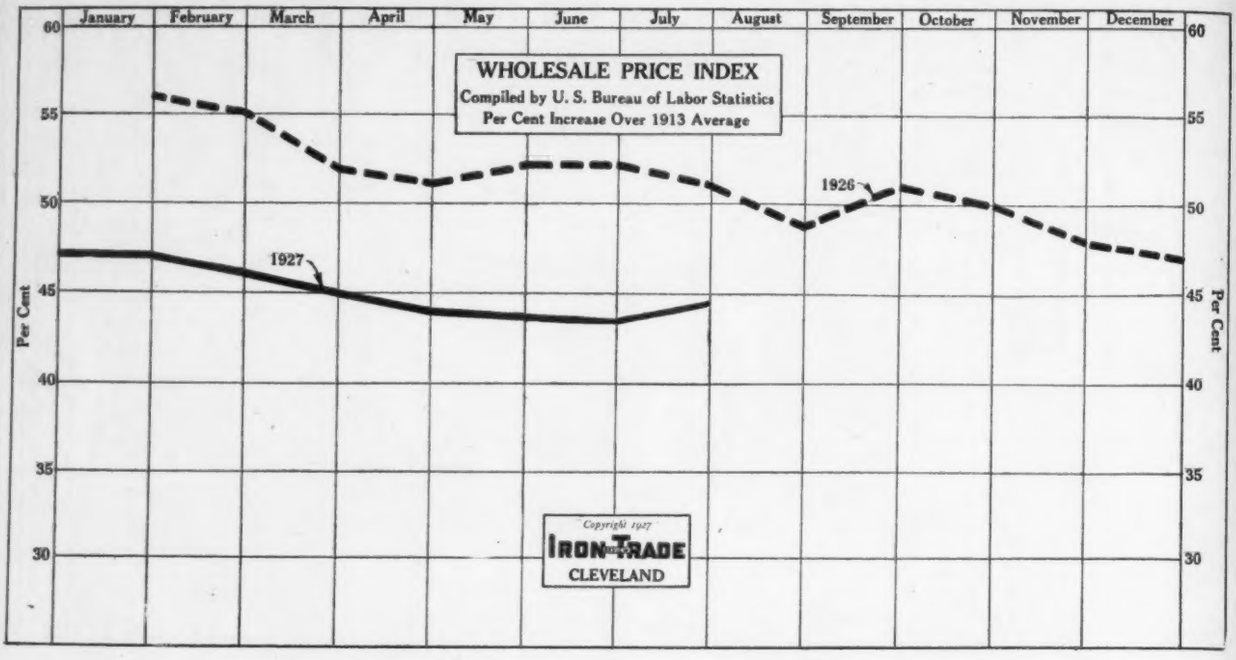
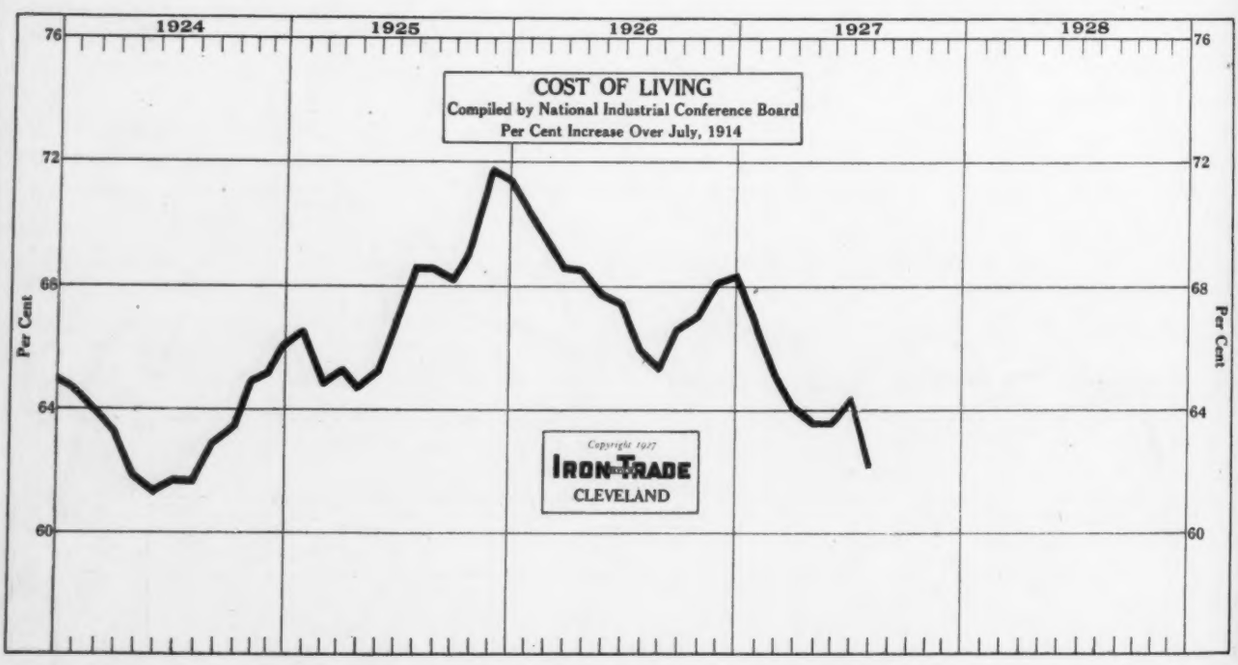


Wholesale Price Index

AN APPARENT turn has come in the wholesale commodity price level. Following a steady decline over many months, the wholesale price index computed by the bureau of labor statistics at Washington advanced nearly 1 per cent in July. The index now stands at 44.6 per cent over the 1913 level, compared with 43.7 per cent over 1913 in June, and 50.7 over 1913 in July, 1926. The purchasing power of the 1913 dollar in July of this year was 69.2 cents the index shows.

Cost of Living

ALTHOUGH wholesale prices showed somewhat greater firmness in July, retail prices declined sharply during the month. The cost of living index, compiled by the national industrial conference board stands at 62.2 per cent over the 1914 level, compared with 64.2 over 1914 one month before and with 68 per cent over the 1914 level at the beginning of the year. The decline was due to recessions in the price of food and shelter. Lower retail prices have followed declines for wholesale prices.



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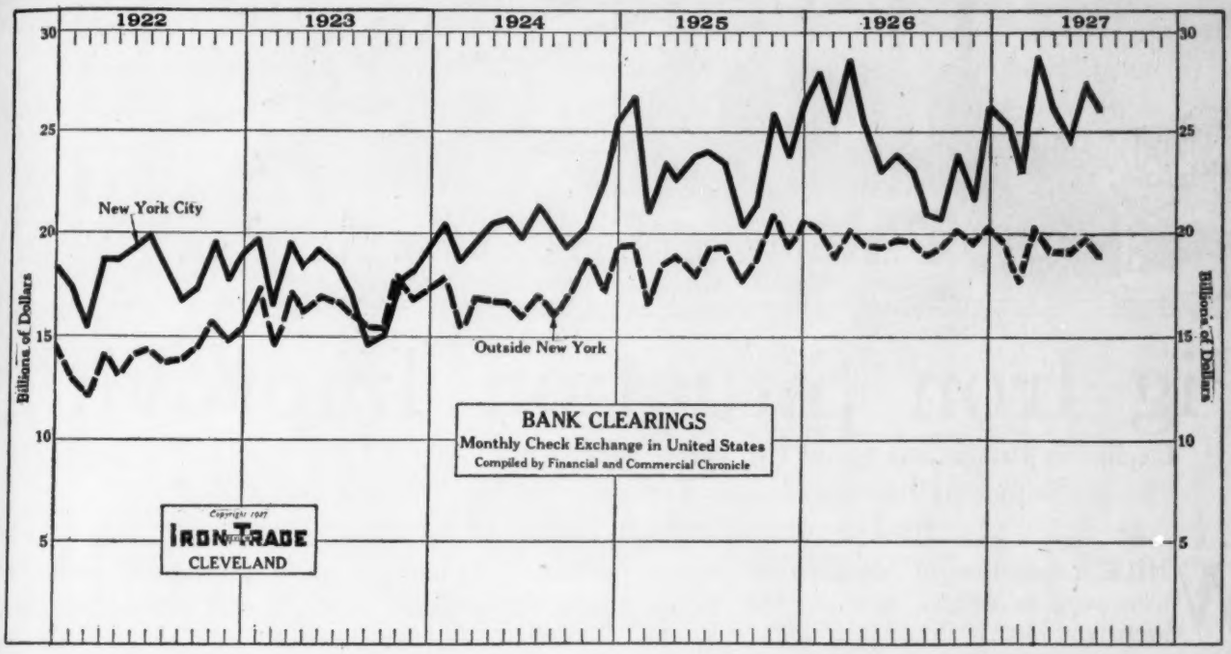
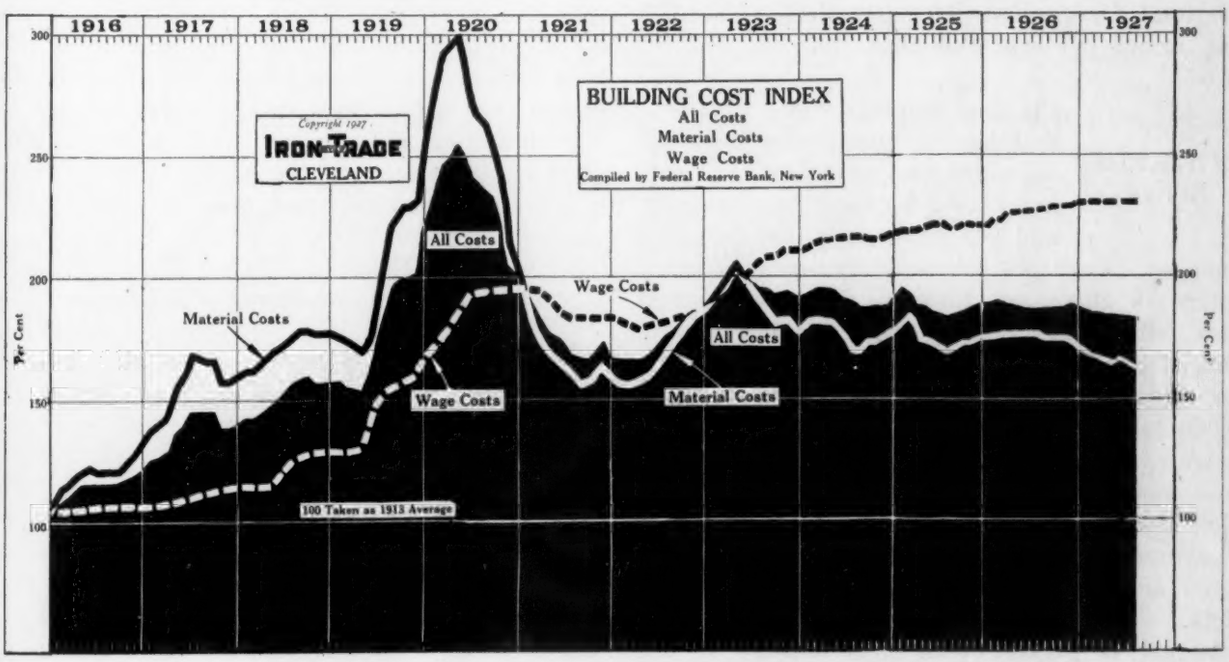


Bank Clearings

BANK clearings in the United States suffered seasonal recession in July. In New York the total was $26,100,000,000. This compared with $27,800,000,000 in June. In July, 1926, the total was approximately $24,000,000,000. The gain in New York this year reflects heavier stock market transactions at a higher level of prices. Outside of New York, bank clearings in July stood at $18,800,000,000, a slight decline from the total of $19,900,000,000 in July, 1926. This reflects some general recession in trade.

Building Cost Index

BUILDING costs are continuing to work to lower levels. The index as compiled by the federal reserve bank in New York for the cost of building throughout the country, stood at 189 in July. This compared with 190 in June and with 194 in July, 1926. The index has declined six points since the beginning of the year. The recession has been due chiefly to lower cost of materials. This index stands at 162 against 164 one month before and 172 one year ago. Wage costs continue at the peak.



Pig Iron Situation Improving

Decline in Production Slows Up, with August Total Only 0.8 Per Cent Below July —Shipments Increase, Larger Demands Appear—Steel Industry Looks for Renewed Activity in Middle of September

WHILE production of pig iron in August continued to decline, for the fourth consecutive month, the decrease was the smallest of any of the four months, suggesting that the low point of the year has been reached and an upturn may be expected in September.

Total production in August was 2,929,020 tons, only 25,605 tons below that of July. Daily average output for August was 94,484 tons, or 827 tons less than the July average. August and July each having 31 days, the decline in total output and daily average relatively is the same, 0.8 per cent. The drop in the number of active stacks, from 190 in July to 188 in August, was the smallest of any since the recession in production began in May.

The August daily average, 94,484 tons, was the lowest for any month since August, 1925. The total for August, 2,929,020 tons, is 271,703 tons, or 8.5 per cent less than that for August, 1926.

Pig Iron More Active

Pig iron displays more life; several leading consumers, including Standard Sanitary Mfg. Co., having closed forward requirements, and others negotiating for good tonnages. Furnaces are reducing stocks. August shipments surpassed those of July, while new sales fell slightly behind those of that month. Makers represented at Cleveland booked 170,000 tons in August; at Chicago sales ran to over 60,000 tons. Foundry iron on recent tests demonstrated strength at $17.50, base, valley, while basic eased off 25 cents to $17.25. The Buffalo market is stronger. Foundry coke is in better demand with prices steady, while heating coke shows advances of 50 cents to $1 in some districts.

August is passing with little change in the position of finished steel. Structural bookings have declined somewhat in the past week, due largely to the exhaustion of pending work at New York, but no other finished steel line is so active. Those products finding a major outlet in the automotive industry have undergone further contraction both in sales and production. The 1928 rail market is more active and inquiry for locomotives has expanded, but interest in cars is dormant. Steelmaking averages 67 to 69 per cent, with the industry still looking to the middle of September to develop improvement.

Rail Inquiries Developing

The New York Central railroad is expected to close on 175,000 tons of rails for 1928 delivery, with the usual option on additional tonnage. The Pennsylvania railroad, which has taken nearly 225,000 tons of rails this year, probably will cover on 175,000 to 200,000. Chicago mills have booked 5000 to 6000 tons for current rolling. An inquiry for 125 for export tops a fairly active locomotive market.

Stripmakers and other users of semifinished steel display more interest in their September requirements and Pittsburgh finds the semifinished market the most active since late June.

Chicago Bar Sales Off

Sales of soft steel bars in western territory have fallen below the level of Chicago shipments, but high hopes are held that renewed interest by farm implement manufacturers will correct this condition. Pittsburgh makers of bars are less able to ship from stock. At New York the bar price is a trifle firmer.

Sheet production has eased off to a marked degree as the automotive industry continues to slacken its pace. In the Mahoning valley one-third fewer mills than last week are now on.

The Market Section

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Aug. 31, 1927	July, 1927	May, 1927	Aug., 1926
PIG IRON				
Bessemer, valley, del., Pittsburgh	$20.26	20.26	20.86	19.76
Bassic, valley	17.25	17.50	18.10	17.50
Basic, eastern del., eastern Pa.	19.75	20.50	20.75	21.00
*No. 2 foundry, del., Pittsburgh	19.26	19.26	20.26	19.26
No. 2 foundry, Chicago	19.50	20.00	20.00	21.00
*Southern No. 2, Birmingham	17.25	17.45	18.00	21.00
*Southern Ohio, No. 2 Ironton	20.00	19.00	20.00	19.90
**No. 2X, Virginia furnace	21.50	22.00	22.00	22.75
**No. 2X, eastern, del. Phila.	21.26	21.51	22.26	22.01
Malleable, valley	17.50	17.50	18.50	17.50
Malleable, Chicago	19.50	20.00	20.00	21.00
Lake Superior charcoal, del. Chicago	27.04	27.04	27.04	29.04
Gray forge, val., del., Pittsburgh	18.76	18.76	19.76	19.01
Ferromanganese, del., Pittsburgh	94.79	94.79	99.79	92.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.85	2.90	2.80	2.85
Connellsville, foundry, ovens	4.00	4.00	3.80	3.60
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	33.50	33.75	34.00	36.00
Sheet bars, open-hearth, Pittsburgh	33.50	33.50	33.75	36.00
Billets, open-hearth, Pittsburgh	33.00	33.00	33.00	35.00
Wire rods, Pittsburgh	43.00	43.00	42.00	45.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.80	1.80	1.85	2.00
Steel bars, Chicago	1.90	2.00	2.00	2.10
Steel bars, Philadelphia	2.12	2.12	2.17	2.27
Iron bars, Philadelphia	2.12	2.17	2.17	2.27
Iron bars, Chicago	2.00	2.00	2.00	2.00
Shapes, Pittsburgh	1.80	1.80	1.85	2.00
Shapes, Philadelphia	2.02	2.07	2.07	2.32
Shapes, Chicago	1.90	2.00	2.00	2.10
Tank plates, Pittsburgh	1.80	1.80	1.85	1.90
Tank plates, Philadelphia	2.12	2.12	2.17	2.22
Tank plates, Chicago	1.90	2.00	2.00	2.10
Sheets, black, No. 24, Pittsburgh	3.00	3.00	2.90	3.10†
Sheets, blue anl., No. 10, Pittsburgh	2.25	2.25	2.25	2.30
Sheets, gal., No. 24, Pittsburgh	3.85	3.85	3.80	4.30†
Sheets, black, No. 24, Chicago	3.15	3.15	3.10	3.25†
Sheets, blue anl., No. 10, Chicago	2.40	2.40	2.40	2.45
Sheets, galvanized, No. 24, Chicago	4.00	4.00	3.95	4.45†
Wire nails, Pittsburgh	2.55	2.55	2.55	2.65
Wire nails, Chicago	2.60	2.60	2.55	2.70
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
†Based on No. 28 gage.				
OLD MATERIAL				
Heavy melting steel, Pittsburgh	15.00	14.95	15.50	17.75
Heavy melting steel, eastern Pa.	13.75	13.75	14.45	16.75
Heavy melting steel, Chicago	12.25	12.10	12.35	14.00
No. 1 wrought, eastern Pa.	15.75	16.25	16.75	17.25
No. 1 wrought, Chicago	13.45	12.35	12.75	14.75
Rails for rolling, Chicago	15.25	14.60	15.10	17.25

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (August 31, 1927)	$36.27
Last week (August 24, 1927)	36.23
One month ago (July, 1927)	**36.41**
Three months ago (May, 1927)	**36.76**
One year ago (August, 1926)	**37.61**
Ten years ago (August, 1917)	**89.69**
Fourteen years ago (August, 1913)	**25.97**

Pittsburgh district mills are booking orders that are seasonally normal from practically all classes of users save the automotive. Failure of Chicago mills to obtain expected flood rehabilitation business in the South has forced curtailment in that district. Sheet price irregularities are ascribed to special conditions, but the setup is inimical to the price structure.

With lake shipments of iron ore in August estimated at 8,750,000 tons, the movement for the season to Sept. 1 has fallen behind that in the comparable period of 1926 by approximately 500,000 tons.

A more stable condition of prices is reflected in the fact IRON TRADE REVIEW'S composite of 14 leading iron and steel products stands practically unchanged from a week ago, at $36.27, an advance of 4 cents.

Late News Flashes

Pittsburgh Mill Operations Low

Pittsburgh, Aug. 30.—Steelmaking here does not average more than 60 per cent of capacity. Some independents are down to one-third of capacity.

American Radiator Moves Purchasers

New York, Aug. 30.—American Radiator Co. is transferring its purchasing department from Buffalo to New York. American Radiator Co. is a heavy purchaser of pig iron in addition to making iron under its subsidiary, Tonawanda Iron Corp., with furnace at North Tonawanda, N. Y.

Noncommittal on New Bethlehem Subsidiary

New York, Aug. 30.—Eugene G. Grace, president of the Bethlehem Steel Corp. has refused to comment on reports that the Bethlehem corporation has organized the Calmar Steamship Co. to engage in intercoastal shipping.

Finds No Dumping of Fluorspar

Washington, Aug. 30.—After several months of investigation the custom bureau, treasury department, has announced that it has been unable to find any dumping of fluorspar on the American market. A preliminary notice was made public some weeks ago that no dumping had been found from certain countries but all reports are now in and no dumping has been found from any country. The case has been dropped.

Valley Production Foremost in Months

Youngstown, O., Aug. 30.—Rates of steel mill operations in this district have dropped to the lowest in some months, with 32 independent open hearths operating out of 53, but with the average of all operations not over 60 per cent. Just 57 independent sheet units out of 127 in the district are active, three plants being down entirely at Niles. Both tin plate and strip mill operating rates are lower and bar mills irregular.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$33.00
Pittsburgh, bessemer	33.00
Youngstown	33.00
Cleveland	33.00
Philadelphia	38.30 to 39.30
Chicago	35.00
Forging, Pittsburgh	39.00
Forging, Philadelphia	44.30

SHEET BARS

Pitts., Young., and Cleve.	$33.50 to 34.00

SLABS

Pitts., Young., and Cleve.	$33.00

WIRE RODS

Pittsburgh	43.00
Cleveland	43.00
Chicago	44.00

Standard extras, $5 for screw stock: $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

All grades, Pittsburgh	1.80c to 1.85c

Standard Structural Shapes

Pittsburgh	1.80c
Philadelphia	1.90c to 2.12c
New York	1.99c to 2.14c
Chicago	1.90c to 2.00c
Cleveland	1.99c
Birmingham	1.95c to 2.00c
Pacific coast, c.i.f.	2.40c

Steel Plates

Pittsburgh	1.80c
Philadelphia	2.12c
New York	2.14c
Chicago	1.90c to 2.00c
Cleveland	1.99c
Birmingham	1.95c to 2.00c
Pacific coast, c.i.f.	2.40c

Iron and Steel Bars

Pittsburgh, soft steel	1.80c to 1.85c
Pittsburgh, cold finishing	1.95c to 2.00c
Pittsburgh, forging quality	1.95c to 2.00c
Philadelphia, soft steel	2.12c
New York, soft steel	2.14c
Chicago, soft steel	1.90c to 2.00c
Cleveland, soft steel, mill	1.80c
Cleveland, soft steel, del.	1.80c to 1.99c
Birmingham, soft steel	1.95c to 2.00c
San Francisco, soft steel	2.35c to 2.40c
Pittsburgh, refined iron	2.75c to 4.25c
Pittsburgh, reinforcing billet	1.80c to 1.85c
Chicago, reinforcing billet	2.30c to 2.75c
Chicago, reinforc. rail steel	1.90c to 2.40c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	1.90c
Mill, rail steel	1.65c to 1.75c
Philadelphia, common iron	2.07c to 2.22c
New York, common iron	2.09c to 2.24c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pitts., 6 in. and under	2.80c
Bands, Pitts., 6 in. and under	2.80c
Bands, Pittsburgh, over 6 in.	2.10c
Hot rolled strip, Pitts, stamping quality, over 6 in.	2.10c
Hot rolled strip steel, Chicago	2.20c to 2.60c
Bands, Chicago, under 6 inches	2.40c to 2.60c
Bands, Chicago, 6 in and over	2.20c to 2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh, Cleveland	3.25c
Worcester, Mass.	3.40c
Chicago	3.25c to 3.40c
Stripsheets, 12 in. and wider, Pitts.	3.00c

Cold Finished Steel

Cold finished steel bars, drawn or rolled, Pitts., Chi., c.l.	2.20c to 2.30c
Steel shafting, Pittsburgh, Chi.	2.30c
Cold finished steel bars, Cleve.	2.35c

Chain, Piling, Cut Nails

Cut nails, c. l., f.o.b. Mills	2.80c
Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.20c to 2.25c

Alloy Steel

Hot Rolled

F.o.b. Pittsburgh or Chicago

To Tonnage Users

S.A.E. Series Numbers	100 lbs. Bars
2100 (*½ per cent NI. 0.10 to 0.20 per cent C.)	$2.90 to 3.00
2300 (3½ per cent nickel)	4.15
2500 (5 per cent nickel)	5.10 to 5.20
3100 (Nickel chromium)	3.15 to 3.25
3200 (Nickel Chromium)	4.50 to 4.75
4100 (Chromium molybdenum)	3.15 to 3.20
4100 (Ch. mol. 0.25-0.40)	3.90 to 4.05
4615 (Ni. molyb. 1½, 0.10-0.20 molyb.)	4.25 to 4.50
5100 (Chrom. steel)	3.15 to 3.20
6100 (Ch. Van. Forg.)	4.00 to 4.10
6100 (Ch. Van. spring)	3.60 to 3.80
9200 (Silico Mang., spring steel)	3.00 to 3.20
9250 (Silico Mang., spring steel)	3.00 to 3.10
N. C. V., (1½% Ni. 1% Chr., Van. 15)	4.20 to 4.30

*Mill number not formally accepted by S. A. E.

Hot rolled alloy billets 4 x 4-inch and over take the same prices per gross tons as same specification of alloy bars per net ton. Sizes from 4 x 4-inch down to 2½ x 2½-inch take same basis plus $5 a ton extra. Billets smaller than 2½ x 2½-inch take bar price on net ton basis.

Cold Rolled

Cold rolled alloy steels take 1c a pound extra over hot rolled when mean carbon is 0.30 or under. When the carbon is above 0.30 the extra for cold rolled is 1.75c, including annealing.

Sheets

SHEET MILL BLACK

No. 24, Pittsburgh base	3.00c
No. 24, Philadelphia, delivered	3.32c
No. 24, Gary, Indiana Harbor	3.10c
No. 24, Chicago, delivered	3.15c
No. 24, Birmingham, base	3.15c

TIN MILL, BLACK

No. 28, Pittsburgh	3.10c
No. 28, Gary base	3.20c

GALVANIZED

No. 24, Pittsburgh base	3.85c
No. 24, Philadelphia, delivered	4.17c
No. 24, Gary, Indiana Harbor	3.95c
No. 24, Chicago, delivered	4.00c
No. 24, Birmingham, base	4.00c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.25c
No. 10, Philadelphia, delivered	2.57c
No. 10, Gary, Indiana Harbor	2.35c
No. 10, Chicago, delivered	2.40c
No. 10, Birmingham, base	2.40c

AUTOMOBILE

No. 20, Pittsburgh, base	4.25c

IRON

No. 10, Pitts., blue ann., c.l.	2.90c
No. 24, Pitts., Box annealed, one pass cold, carload	3.85c
No. 24, Pitts., gal., c.l.	4.85c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base $5.35 to 5.50

Gary, Ind., base 10 cents higher.

Long ternes, primes, No. 24 4.20c

*Price subject to quantity differentials.

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra

F.O.B. Cleveland and Pittsburgh base

Bright plain wire, No. 9 gage	2.40c
Annealed fence wire	2.55c
Galvanized wire, No. 9 gage	3.00c
Barbed wire, painted	3.00c
Barbed wire, galvanized	3.25c
	Per 100 lbs.
Wire nails	$2.55
Galvd' nails, shorter than 1-in.	4.55
Galv'd nails, 1-in. and longer	4.55
Polished staples	3.00
Galvanized staples	3.25

Coated nails, 100 lb. kegs, subject to Sept. 1, 1926, extra card over wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relay, rails, Pitts., 60 to 70 lb.	25.00 to 27.00
Light rails, 25 to 45, mills	36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts.	2.80c
Spikes, boat and barge, Pitts.	3.10c
Spikes, railroad, Chicago	2.90c
Track bolts, Pitts. stand.	70 off list
Track bolts, Chicago	3.90c
Tie plates, Chicago, Pitts.	2.35c

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less. Chicago del. 2½ points less.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled 3¼ to 3½-inch	46 off

Further discounts of seven 5 per cents for carloads or six 5 per cents for less-carload, on lap welded steel. On seamless hot rolled several more 5 per cents, and on charcoal two 10 per cents to two 10 and one 5 per cents.

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Six-inch and over, Birming'm	$30.00 to 30.50
Four-inch, Birmingham	34.00 to 34.50
Four-inch, Chicago	41.20 to 44.20
Six-inch to 24-inch, Chicago	36.20 to 40.20
Over 24-inch, Chicago	45.20
Four-inch, New York	44.60 to 45.60
Six-inch and over, New York	41.60 to 43.60
Standard fittings, Bir. base	$100.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $4 higher than Class B

Bolts and Nuts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.

CARRIAGE BOLTS

All sizes, cut thread	60 to 70 off

Rolled thread ⅝x6 and smaller take 10 per cent lower list.

Eagle list	60 to 70 off

MACHINE BOLTS

All sizes, cut thread	60 to 70 off

Rolled thread ⅝x6 and smaller take 10 per cent lower list.

Lag screws	60 to 70 off
Plow bolts, Nos. 1-2-3-7 heads	60 to 70 off
Tap bolts	60 to 70 off
Blank bolts	60 to 70 off
Stud bolts without nuts	60 to 70 off
Stove bolts, 80-10-5 off in packages; 80-10-5 with 2½ off in bulk.	
Tire bolts	60-5 off

NUTS

Semifinished	60 to 70 off

HEXAGON CAP SCREWS

Milled	80-10-10 off
Upset 1-in. diam and smaller	85-5 off

SQUARE HEAD SET SCREWS

Milled	80-10 off
Upset, 1-in. diam. and smaller	80-10-10 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	3.00c
Structural rivets, c. l., Chicago	3.10c
**Rivets, 7/16-inch and smaller, Pittsburgh, Cleveland and Chicago	70 and 10 to 70, 10 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.75 to 6.90 off
Wrought c.l., Pitts. dist.	6.75 off
Lock washers (dealers')	85-5 off
Lock washers (consumers)	85 off

Pig Iron

Shipments Exceed Output of Some Merchant Interests—Sales Fairly Good—Prices Steady—Inquiry Only Fair

SHIPMENTS continue to represent the bright side of the pig iron situation. August shipments exceeded those of July, by as much as 25 per cent in the experience of some leading producers, while the month's sales fell below those of July. Nevertheless, the past month figured fairly well from a sales standpoint. Furnaces represented at Cleveland booked 170,000 tons, while orders placed in the Chicago district amounted to well over 60,000 tons. Shipments have begun on orders for more than 6000 tons for delivery by vessel from a Cleveland blast furnace and a Buffalo furnace into the Chicago district. Several important consumers have made purchases in the general market during the week, including American Radiator Co., and Standard Sanitary Mfg. Co.

PITTSBURGH, Aug. 30.—Purchases by the Standard Sanitary Mfg. Co. involving part of its requirements for Allegheny and New Brighton plants for the last quarter feature the pig iron market. These orders for No. 2 and No. 2X iron were divided between several valley producers, none of whom went below $17.50, base. The Standard company will purchase more iron this week. It also purchased 2000 tons of southern iron at $17.25, base, Birmingham, or $20.64, delivered at Louisville. It likewise closed for a tonnage for Baltimore with an eastern Pennsylvania steel interest having a Maryland plant. One Youngstown district foundry bought 500 tons of No. 2 iron at $17.50, valley, a middle interest getting 25 cents a ton commission. Other consumers are closing with regular sources of supply. Malleable also is quoted $17.50, with no transactions. Demand for steelmaking iron is light. One transaction for basic is noted, and basic now is quoted $17.25 to $17.50. Several sales of bessemer involving up to 500 tons at a time have been closed at $18, valley. A few single carloads and also one lot of 200 tons brought $18.50. Most iron producers decline to pile iron at present high fuel costs, and consequently will operate only to fill orders. Some furnaces have been banked until after Labor Day.

Boston, Aug. 30.—With one of the leading factors showing sales of 1500 tons for the past week, the pig iron market remains quiet. Prices at Everett, Mass. are $19 to $21, with freight the controlling factor, and Buffalo iron ranges from $16.50 to $17, base, furnace. General conditions are better than they were a month ago. The melt is showing a slight but steady increase.

New York, Aug. 30.—Sales of pig iron in this territory during the past week aggregated about 15,000 tons. A large portion of this total is accounted for by tonnage buying. Generally the demand is quiet and consumers are satisfied for the time being. The biggest single inquiry now before the trade comes from a New Jersey consumer who wants 750 tons of foundry iron. The Buffalo foundry market appears to be $16.50, furnace, minimum. Eastern Pennsylvania foundry iron continues $20, base, at the nearest furnace. From Buffalo some interest in malleable iron is reported. The International Harvester Co. has bought 500 to 1000 tons of this grade for its Auburn plant. A Connecticut consumer is in the market for a few hundred tons of bessemer.

Buffalo, Aug. 30.—The pig iron market has stiffened within the past few days. A producer who was willing to go close to $16 for preferred tonnage is said to have fixed $16.50 as minimum, and with this competition eliminated others are insisting on $16.50, base, with differentials. One or two makers are on a $17 base for malleable and foundry. The largest sale in the past week was made at $16.50 for 1.75 - 2.25 per cent silicon iron.

Cleveland, Aug. 30.—Pig iron sales are fairly active, with prices a shade easier in outside territory. August sales are below those of July, but shipments are larger. The total of sales in the past week as reported by furnace interests with headquarters here is 30,500 tons, and for August the total is 170,000 tons. The past week's business included several good size lots, one for 3000 tons. American Radiator Co. is understood to have closed for about 2000 tons for Springfield, O., while an Indiana melter placed 1500 tons. A Pittsburgh melter is inquiring for 2300 tons. Inquiries total 5000 to 6000 tons. While Cleveland furnaces have been endeavoring to hold to $17.50, base, furnace for outside shipment, several sales have been closed in the past week at $17.25. The base price for delivery in Michigan continues $18.50, but it is reported silicon differentials have been waived in some instances. The Cleveland market is untested, the quotation remaining at $19, base, delivered. A Cleveland furnace has started shipping pig iron by vessel to Chicago. The report from Chicago in the Aug. 18 issue of IRON TRADE REVIEW that 5000 to 6000 tons was closed there for water shipment from Cleveland has been confirmed in other respects.

Chicago, Aug. 30.—The rate of selling that has characterized this month's business in northern pig iron is continuing. Estimates are that the total closed in the Chicago district during August exceeds 60,000 tons. Shipments are close to the best monthly averages this year. In addition to the pig iron coming into this market by boat from Buffalo other tonnages of foundry and malleable iron have been sold in this district and in Milwaukee for delivery from Cleveland by boat. A cargo arrived at South Chicago from Cleveland on Aug. 26. Inquiries are fair. They include 1000 tons of foundry for the Chicago-Mil-

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Pig Iron Prices

Per gross ton

Bessemer, valley furnace	$18.00 to 18.50
Bessemer, del. Pittsburgh	19.76 to 20.26
Basic, valley furnace	17.25 to 17.50
Basic, del., Pittsburgh	19.01 to 19.26
Basic, Buffalo furnace	16.00 to 16.50
Basic, del., eastern Pa.	19.75 to 20.00
Malleable, valley furnace	17.50
Malleable, del., Pittsburgh	19.26
Malleable, del., Cleveland	**19.00**
Malleable, Chicago furnace	**19.50**
Malleable, Buffalo furnace	16.50 to 17.00
Malleable, del., eastern Pa.	21.00 to 21.50
No. 1X, Eastern del., Phila.	21.76
No. IX, Buffalo furnace	17.00 to 18.00
No. 1 foundry, Chicago furnace	20.00
No. 2 foundry, valley furnace	17.50
No. 2 foundry, del. Pittsburgh	19.26
No. 2 fdy., Everett, Mass., fur.	19.00 to 21.00
No. 2 foundry, Buffalo furnace	16.50 to 17.00
No. 2 foundry, Chicago furnace	19.50
No. 2 foundry, Granite City	19.50 to 20.00
No. 2 foundry, Ironton furnace	**19.00 to 19.50**
No. 2 foundry, del., Cleveland	**19.00**
No. 2 foundry del., Phila.	20.76
No. 2 foundry, N. J., tidewater	19.78 to 21.76
No 2 foundry, east. N. Y., furnace	**18.00 to 20.00**
No. 2X, east, N. J., tidewater	19.78 to 22.26
No. 2X, eastern del., Phila.	21.26
No. 2X, foundry, Buffalo furnace	18.00 to 18.50
No. 2X, eastern del., Boston	**23.15 to 24.15**
No. 2X, foundry, Buffalo furnace	**16.75 to 17.25**
No. 2 Alabama, Birmingham	17.25
No. 2 Alabama, del. Cincinnati	20.94
No. 2 Tenn., Birmingham base	18.00
No. 2 Tenn., del., Cincinnati	21.69
No. 2 Alabama, del. Philadelphia	23.26
No. 2 Alabama, del. Chicago	23.26
No. 2 Ala., del. Chicago river-rail	21.43
No. 2 Ala., del. Boston, rail-water	24.16 to 25.16
No. 2 Alabama, del. Cleveland	23.26
No. 2 Alabama, del. St. Louis	21.67
No. 2X, Virginia furnace	21.50
No. 2X, Virginia, del. Phila.	26.04
No. 2X, Virginia, del., Jers. City	26.37
No. 2X, Virginia, del. Boston	26.71
Gray forge, val., del., Pittsburgh	18.76 to 19.26
Low phos., standard, valley	27.50
Low phos., standard Phila.	25.26 to 27.79
Low phos., copper bearing fur.	23.50 to 24.00
Charcoal, Birmingham	29.00
Charcoal, Superior, del. Chicago	27.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $25.50; 6 per cent $26.50; 7 per cent $27.50; 8 per cent $28.50; 9 per cent $30.00; 10 per cent $32.00; 11 per cent $34.00; 12 per cent $36.00; 13 per cent $38.00; and 14 per cent $40.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $34.00; 11 per cent $36.00; 12 per cent $38.00; 13 per cent $40.00; and 14 per cent $42.00; 15 per cent $44.50; 16 per cent $47.00; 17 per cent $49.50.

Coke

Foundries Taking Larger Tonnages on Contracts—Heating Fuel Also in Better Demand

DEMAND for foundry coke is improving, due to better operations. Most of the increase is reflected in specifications on contracts, rather than by new buying. Cooler weather and prospects in the domestic market have strengthened the prices of heating coke. Beehive furnace coke is in light demand, and prices continue around $2.85 to $3.

Pittsburgh, Aug. 30.—Intermittent weakness is noted in the beehive coke market due to alternating banking and operating of merchant stacks, throwing extra supplies of fuel on the market for spot sale. Blast furnaces are not buying. Nonmetallurgical users are located with great difficulty, hence sales are not numerous. A few want five to 30 carloads at a time, but more take only single carloads. The usual price quoted is $3. Some coke occasionally is available at $2.85. Demand for heating coke is growing. Sales are noted at $2.65 to $2.75. This grade is expected soon to reach the furnace fuel price level, wiping out the usual distinction between the two grades. Domestic coke demand also is increasing, which may later lend strength. Foundry coke customers are covered by contracts. Occasional spot sales are noted at $4 to $4.75, but jobbing foundries on a 20 per cent operating basis and steel foundries at 50 per cent limit selling possibilities. One producer now quoting $4.75 to brokers intends to advance to $4.95 at an early date. Premium brands are $5.35 and $5.60.

Production of coke in the Connellsville region for the week ended Aug. 20 was 68,880 tons, compared with 65,670 tons in the preceding week, according to the *Connellsville Courier*.

Boston, Aug. 30.—Coke production and demand remain unchanged in this market. The foundry coke price is $12, delivered.

New York, Aug. 30.—Specifications for shipments on foundry coke contracts have increased during the past week. It is said this improvement is based on somewhat increased consumption at foundries. In some instances, fears of a tightening situation in coke as a result of the coal strike are responsible. Buying of spot foundry coke is in small volume. Prices on spot beehive foundry coke continue unchanged at $4.50 to $5, Connellsville, for ordinary brands, premium brands selling up to $5. On by-product foundry coke the market continues $9.59 to $10.77, delivered at Newark and other northern New Jersey consuming points, depending on the freight. Delivered prices are figured on the basis of $8.75, ovens.

Detroit, Aug. 30.—Demand for foundry coke is fairly satisfactory. Consumption during August showed a considerable margin over July. Tonnage moving at present is heavier than 20 days ago. Local foundries are maintaining fairly heavy production schedules. A reduction of 50 cents a ton has had little effect on demand. The current quotation is $9, ovens.

Cincinnati, Aug. 30.—The feature of the coke market is a strengthening of the domestic sizes and an advance in by-product egg coke of 50 cents to $1. Specifications for foundry coke are better. Prices are steady.

St. Louis, Aug. 30.—The coke situation in this district has been enlivened by improved inquiry from the West and Southwest, and the placement of some fair tonnages. By-product producers report shipments larger than at the corresponding period last year, and virtually no requests for delayed delivery. Several additional coal mines in the Belville district have resumed production on the Jacksonville scale, 29 out of the 70 in that section having signed up.

Birmingham, Ala., Aug. 30.—New demand is noted in the coke market, and considerable tonnage is moving to the Middle West. Quotations are firm at $5.50 for by-product foundry coke and $6 for beehive. Preparations are under way for increased production. Coal production in Alabama now is at 390,000 tons weekly, a little under the normal output.

Coke Prices

Beehive Ovens

Prices per net ton	
Connellsville furnace	$2.85 to 3.00
Connellsville foundry	4.00 to 4.75
New River foundry	7.00 to 8.00
New River furnace	6.00
Wise county furnace	4.25 to 5.50
Wise county foundry	4.00 to 5.00
Alabama foundry	6.00

By-Product

Foundry, Newark, N. J.; del.	9.59 to 10.77
Foundry, Chicago, ovens	9.75
Foundry, New England, del.	12.00
Foundry, St. Louis	9.75
Foundry, Birmingham	5.50
Foundry, Indianapolis, del.	9.75
Foundry, Ashland, Ky.	7.50
Foundry, Portsmouth, O.	7.50
Foundry, Detroit	9.00

Ferroalloys

Market Moving Slowly—Some Demand For Spot Spiegeleisen

Pittsburgh, Aug. 30.—Ferroalloy demand continues restricted in keeping with the slow summer operating schedules maintained by steel mills. Shipments remain fairly steady, however, although no new business is appearing. Ferromanganese demand is steadier than that of some other ferroalloys. Practically all consumers are covered for the year by contract arrangements, but curtailed operations limit consumption. Quotations are unchanged at $90, duty paid, seaboard, for 78 to 82 per cent, domestic and foreign material. Spiegeleisen shipments are being held up in some directions, with consumers using less and meeting their needs from their stocks collected as far back as last June. Specifications, accordingly, are not as active as a few weeks ago, and few September requirements have yet been released. Some makers are increasing their stocks in anticipation of better demand a few weeks hence. Spiegeleisen quotations remain unchanged at $33 to $34 a ton for 18 to 22 per cent material. Ferrosilicon shipments recently have been unusually slow. The spot quotation on 50 per cent ferrosilicon remains unchanged at $87.50, while the contract price is $85 per gross ton.

New York, Aug. 30.—Demand for spot spiegeleisen is much improved and recent sales have involved many carloads. On this business the usual price at the nearest furnace is $33, on the basis of the 19 to 21 per cent grade. Shipments on contracts, however, are at a reduced rate, owing to the greatly curtailed consumption in the steel industry. Stocks are accumulating at the furnaces. Special ferroalloys are steady with hope of greater improvement in shipments next month. Some time ago there was an increase but it did not prove to be as important as at first hoped. Tungsten has changed little from the situation of weakness but some factors in the market think that the recent sale of wolframite ore at about $10 a unit, duty paid, was the bottom and some important sellers are firmer.

Chicago, Aug. 30.—Sales of ferroalloys are in carlot proportions. Spot cars of spiegeleisen are available at $33, eastern furnace, for the 19 to 21 per cent grade. Belief is that a large order might obtain a lower price. Ferromanganese is dull. Specifications for the latter are only moderate.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent, tidewater, duty paid	$90.00
Ferromanganese, del., Pittsburgh	94.79
Spiegeleisen, 19 to 21 per cent domestic furnace	33.00
Ferrosilicon, 50 per cent freight allowed	85.00 to 87.50
Ferrochrome, 60-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.50
Ferrotungsten stand, lb. cont.	92.00 to 95.00
Ferrovanadium, 30-40 per cent, per lb. estimated on analysis	3.15 to 3.60
Ferro-carbon-titanium carload, producers plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18%)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala., (24 per cent)	122.50

The Market Section

Plates

Larger Demands for Tank Material Features Market—Prices Are Steady

BETTER demand for plates for oil storage tanks is noted, with bookings for this purpose at Chicago during the week amounting to 10,000 tons. About 6000 tons additional are on inquiry. Requirements of general manufacturing lines are not impressive. Some demand for plates for barges is current at Pittsburgh. The market remains at 1.80c, Pittsburgh.

PLATE PRICES, PAGE 520

Chicago, Aug. 30.—Activity in the plate market again has been quickened by the placing of 8000 to 10,000 tons of oil storage plates in this district. This tonnage was in two orders, one of which was 1500 tons. About 5000 to 6000 tons of oil storage plates are on inquiry. Car building shops already have taken the majority of their material from the mills for pending car orders. Business booked from the general manufacturing lines is only moderate. Boiler and small tank interests, whose work follows activity in building lines, are the largest of the latter class. In the past five weeks oil tank plates placed in the west totaled 25,000 to 30,000 tons. Plates in this district are being sold at 1.90c to 2.00c.

New York, Aug. 30.—Demand for plates shows more vitality than that for most finished products. Tonnage placed during the past week in this territory showed some improvement over the previous weeks. Current orders generally continue to involve small lots for quick shipment. The price continues firm at 1.80c, base, Pittsburgh, on most requirements. Riter-Conley Co., Pittsburgh, has booked two oil storage tanks for erection at Baltimore for the American Oil Co., involving a total of about 900 tons of plates.

Philadelphia, Aug. 30.—Plate demand is maintained up to its recent average. Eastern mills are operating at 40 to 60 per cent. Current business comprises principally small lots for quick shipment, but several large lots are on the market, the usual price is 1.80c, Pittsburgh.

Pittsburgh, Aug. 30.—Orders for large plate tonnages are lacking. United States engineers of the Nashville district are asking bids for the construction of four steel lock gates. Bids will be opened Sept. 6. The United States engineers of the Milwaukee district will open bids Sept. 13 for the construction of two steel barges. Plates are quoted at 1.80c, mills here disclaiming any departure from that level.

CONTRACTS PLACED

350 tons, two barges for Anderson-Tully Co., Memphis, Tenn., to American Bridge Co.
100 tons, tank and tower for San Diego, Calif., to Chicago Bridge & Iron Works.

Italy's imports of machinery in the first quarter of 1927 included 19,865,334 lire from United States, 25,410,785 lire from Great Britain, 87,245,279 lire from Germany and 34,630,625 lire from France.

July Iron Output Down But Steel Rises

Toronto, Ont., Aug. 30.—Pig iron production in Canada in July was 50,997 gross tons compared with 69,427 tons in June and 67,232 tons last July. The seven-month total this year is 454,710 tons against 438,096 tons last year.

Six of the 18 furnaces in the dominion were blowing at the end of July. These included two stacks each of the Dominion Iron & Steel Corp., Sydney, N. S.; Steel Co. of Canada, Ltd., Hamilton, Ont.; and Algoma Steel Corp., Sault Ste. Marie, Ont.

July output of steel ingots and castings was 55,250 tons compared with 59,940 tons in June. The seven-month total for this year is 542,560 tons against 496,031 tons last year.

Pennsylvania Leader in July Coal Output

Pennsylvania, with a total of 8,580,000 net tons, led the states in the production of bituminous coal in July when the total reached 33,637,000 tons. The month's total compared with 36,627,000 tons in June and 43,742,000 tons last July. Following Pennsylvania came southern West Virginia with 8,523,000 tons, eastern Kentucky with 4,101,000 tons, northern West Virginia with 3,200,000 tons, western Kentucky with 2,303,000 tons and Alabama with 1,292,000 tons.

Loss and damage and personal injury claims in 1926 cost the railroads 1.6 per cent of their gross revenue, compared with 1.7 per cent in 1925 and 1.8 per cent in 1924 and 1923.

Semifinished

Specifications for Billets and Slabs Improve—Sheet Bars Still in Dull Market

DEMAND for billets and slabs has improved, specifications received in the last ten days of August by some of the leading producers being the largest since June. Orders for sheet bars are rather quiet in comparison. New purchasing for September requirements has not developed satisfactorily. Forging billets are in light demand. Wire rod producers now are holding for $43.

SEMIFINISHED STEEL PRICES, PAGE 520

Pittsburgh, Aug. 30.—Semifinished specifications have been more attractive in the final 10 days of August than in any similar period since June. Strip steel manufacturers and other users of billets as well as slabs, have been fairly active. They now are getting ready to purchase their September needs. The $33 price appears to be the minimum obtained, and mills now are firmer in their stand for $34 and even $35 for small sizes. Nothing is noted in sheet bars, held at $34. The poor state of the oil business retards demand for forging billets. While single carloads move out on $39 contracts, practically none is going to the manufacturers of oil well tools. Wire rods are going today on $42 contracts but producers claim they will not take any more orders at that figure and want $43. No orders at that price have been noted. Skelp is quoted at 1.80c to 1.85c, with no new business under negotiation.

Philadelphia, Aug. 30.—Several hundred tons of billets are under inquiry in this market. Prices are $33 to $34, Pittsburgh, for rerolling billets and $38 to $39 for forging quality.

Cleveland, Aug. 30.—New demand for semifinished steel for September is not large. Prices are steady. The leading local merchant producer continues to operate nine of its 14 open-hearth furnaces.

Is For New Procedure

Washington, Aug. 30.—The federal tariff commission, it is understood, will recommend to congress in its annual report next December that the flexible provision of the current tariff act be revised. To ascertain the production costs of commodities with any degree of accuracy is most difficult, the commission contends, and more latitude should be permitted in case congress still desires duties subject to increases and decreases by presidential edict.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumers

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	**10.50 to 11.00**
Boston (dealers)	9.00
Buffalo, No. 1	14.75 to 15.25
Buffalo, No. 2	14.00 to 14.50
Chicago	12.25 to 12.75
Cincinnati (dealers)	12.50 to 13.00
Cleveland, No. 1	**13.75 to 14.25**
Cleveland, No. 2	13.25 to 13.75
Detroit, No. 1	11.75 to 12.25
Eastern Pennsylvania	13.00 to 14.00
Eastern Pennsylvania, No. 2	11.50 to 12.00
Bethlehem delivery	13.00 to 14.00
New York (dealers) (railroad)	**10.00 to 10.85**
New York (dealers) (yard)	7.75 to 8.25
Pittsburgh, No. 1	15.25 to 15.50
St. Louis	12.25 to 12.75
Valleys, No. 1	**15.50**

COMPRESSED SHEETS

Buffalo	12.75 to 13.25
Chicago	10.75 to 11.25
Cleveland	**13.25 to 13.75**
Detroit	11.25 to 11.75
Pittsburgh	14.50 to 15.00
Valleys	14.75 to 15.25

BUNDLED SHEETS

Buffalo	9.50 to 10.00
Cincinnati (dealers)	9.50 to 10.00
Cleveland	**11.75 to 12.25**
Eastern Pennsylvania	11.00 to 11.50
Pittsburgh	13.50 to 14.00
St. Louis	**8.50 to 9.00**

SHEET CLIPPINGS, LOOSE

Chicago	**8.25 to 8.75**
Cincinnati	9.00 to 9.50
Detroit	8.50 to 9.00
St. Louis	**8.00 to 8.50**

STEEL RAILS, SHORT

Birmingham	**12.50 to 13.00**
Buffalo	14.50 to 15.00
Chicago	**16.00 to 16.50**
Cincinnati (dealers)	17.75 to 18.25
Detroit	**12.50 to 13.00**
St. Louis	15.50 to 16.00

STOVE PLATE

Birmingham	**13.00 to 14.00**
Boston (consumers)	12.50 to 13.00
Buffalo	13.50 to 14.00
Chicago (net)	**12.75 to 13.25**
Cincinnati (dealers) net	**10.00 to 10.50**
Cleveland	**12.00 to 12.50**
Detroit (net tons)	**10.50 to 11.00**
Eastern Pennsylvania	13.00
New York (dealers) (mill)	9.00 to 9.25
Pittsburgh	**12.00 to 12.50**
St. Louis	**14.00 to 14.50**

LOW PHOSPHORUS

Buffalo, billet and bloom crops	16.50 to 17.00
Cincinnati (dealers)	**14.00 to 14.50**
Eastern Pennsylvaian	**17.50 to 18.50**
Pitts. billet and bloom crops	20.00 to 21.00
Cleveland, billet and bloom crops	**17.00 to 17.50**

SHOVELING STEEL

Chicago	12.25 to 12.75
Pittsburgh	11.50 to 12.00
St. Louis	12.25 to 12.75

KNUCKLES, COUPLERS, SPRINGS

Chicago	14.25 to 14.75
Eastern Pennsylvania	**16.00 to 16.50**
Pittsburgh	17.00 to 17.25
St. Louis	13.00 to 13.50

FROGS, SWITCHES, GUARDS

Chicago	14.00 to 14.50
St. Louis	14.75 to 15.25

ANGLE BARS—STEEL

Buffalo	**15.25 to 15.75**
Chicago	14.50 to 15.00
St. Louis	12.75 to 13.25

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	**11.00 to 11.50**
Boston (dealers)	**10.50 to 11.00**
Buffalo, No. 1	**13.00 to 13.50**
Buffalo, No. 2	**14.50 to 15.00**
Chicago, No. 1	13.45 to 14.00
Chicago, No. 2	12.25 to 12.75
Cincinnati, No. 1 (dealers)	12.25 to 12.75
Cleveland, No. 1	**11.50 to 12.00**
Eastern Pennsylvania	15.50 to 16.00
New York, No. 1 (dealers)	**14.00 to 14.50**
Pittsburgh, No. 1	13.00 to 13.50
Pittsburgh, No. 2	15.25 to 15.50
St. Louis, No. 1	**11.00 to 11.50**
St. Louis, No. 2	12.25 to 12.75

WROUGHT PIPE

Boston (dealers)	7.00 to 7.50
Eastern Pennsylvania	12.00 to 12.50
Buffalo	**13.00 to 13.50**
New York (dealers)	**8.75**

YARD WROUGHT

Boston	**8.50 to 9.00**
Eastern Pennsylvania	**15.00 to 15.50**

BUSHELING

Buffalo	**12.75 to 13.25**
Chicago, No. 1	**11.00 to 11.50**
Chicago, No. 2	9.00 to 9.50
Cincinnati No. 1 (dealers)	10.50 to 11.00
Cincinnati, No. 2	7.00 to 7.50
Pittsburgh, No. 1	13.25 to 13.50
St. Louis, No. 1	10.25 to 10.75

MACHINE SHOP TURNINGS

Birmingham	**8.50 to 9.00**
Boston	6.00 to 6.50
Buffalo	9.50 to 10.00
Chicago	**7.50 to 8.00**
Cincinnati (dealers)	8.25 to 8.50
Cleveland	9.00 to 9.25
Detroit	8.00 to 8.50
Eastern Pennsylvania	11.00
New York (dealers)	7.25 to 7.50
Pittsburgh	11.75 to 12.00
St. Louis	**6.75 to 7.25**

CAST IRON BORINGS

Birmingham (chemical)	**13.00 to 13.50**
Birmingham (plain)	**8.50 to 9.00**
Boston, chemical	10.75
Boston (dealers)	6.50
Buffalo	10.25 to 10.75
Chicago	10.50 to 11.00
Cincinnati (dealers)	9.00 to 9.50
Cleveland	10.75 to 11.25
Detroit	8.75 to 9.25
Eastern Pennsylvania	11.50 to 12.00
Eastern Pennsylvania (chem.)	15.00 to 15.50
New York (dealers)	7.50 to 7.75
Pittsburgh	**11.50 to 12.00**
St. Louis	9.25 to 9.75
Valleys	**13.50**

MIXED BORINGS AND TURNINGS

For blast furnace use

Boston (dealers)	**5.50 to 6.00**
Buffalo	10.25 to 10.75
Cincinnati (dealers)	9.00 to 9.50
Cleveland	10.75 to 11.25
Detroit	8.75 to 9.25
Eastern Pennsylvania	10.00 to 11.00
New York (dealers)	7.00 to 7.50
Pittsburgh	11.50 to 12.00

PIPES AND FLUES

Chicago (net)	7.50 to 8.00
Cincinnati (dealers)	**8.00 to 8.50**
St. Louis	9.75 to 10.25

RAILROAD GRATE BARS

Buffalo	**11.00 to 11.50**
Chicago (net)	**11.25 to 11.75**
Cleveland	**12.00 to 12.50**
Eastern Pennsylvania	13.00
New York (dealers)	8.75 to 9.25
St. Louis	13.00 to 13.50

FORGE FLASHINGS

Boston (dealers)	6.00 to 6.50
Buffalo	**11.50 to 12.00**
Chicago	**9.00 to 9.50**
Cleveland (over 10 in.)	**12.50 to 13.00**
Detroit	10.25 to 10.75
Pittsburgh	**13.00 to 13.50**

FORGE SCRAP

Boston (dealers)	6.00 to 6.50
Chicago	**14.50 to 15.00**
Eastern Pennsylvania	**10.50 to 11.00**

ARCH BARS AND TRANSOMS

Chicago (net)	19.00 to 19.50
St. Louis	20.00 to 20.50

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	8.00 to 8.50
Buffalo	12.75 to 13.25
Chicago	10.50 to 11.00
Cleveland	**12.50 to 13.00**
Eastern Pennsylvania	**12.50 to 13.00**
Pittsburgh	13.50 to 14.00
St. Louis	**9.00 to 9.50**

STEEL CAR AXLES

Birmingham	**16.00 to 17.00**
Boston (shipping point)	15.50 to 16.00
Buffalo	15.50 to 16.00
Chicago	**20.15 to 20.70**
Cleveland	**16.00 to 16.50**
Eastern Pennsylvania	**20.00**
Pittsburgh	**19.00 to 19.50**
St. Louis	**19.00 to 19.50**

SHAFTING

Boston (shipping point)	13.50 to 14.00
Chicago	17.90 to 18.45
Eastern Pennsylvania	17.50 to 18.00
New York (dealers)	14.00 to 14.50
St. Louis	17.50 to 18.00

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	**12.00 to 13.00**
Boston (consumers)	**17.00 to 17.50**
Buffalo, iron	14.00 to 14.50
Buffalo, steel	16.00 to 16.50
Chicago, iron	14.50 to 15.00
Chicago, steel	15.00 to 15.50
Cincinnati	**13.50 to 14.00**
Eastern Pennsylvania	**15.50**
New York iron (dealers)	12.50 to 13.50
Pittsburgh, iron	15.00 to 15.50
Pittsburgh, steel	17.00 to 17.25
St. Louis, iron	13.50 to 14.00
St. Louis, steel	15.25 to 15.75

No. 1 CAST SCRAP

Birmingham, cupola	**14.00 to 15.00**
Boston	15.50 to 16.00
Buffalo	**15.00 to 15.50**
Chicago, No. 1 machinery	16.80 to 17.35
Chicago, No. 1 railroad	15.65 to 16.25
Chicago, No. 1 agricultural	15.65 to 16.20
Cincinnati No. 1 machinery cupola (net tons dealers)	**15.50 to 16.00**
Cleveland, cupola	**15.75 to 16.25**
Detroit (net tons)	**13.00 to 13.50**
Eastern Pennsylvania (cupola)	**16.00 to 16.50**
New York, cupola (dealers)	13.25 to 13.75
Pittsburgh, cupola	**15.00 to 15.50**
San Francisco, delivered	**20.00 to 21.00**
Seattle	**16.00**
St. Louis, railroad	14.50 to 15.00
St. Louis, agricultural	14.50 to 15.00
St. Louis, machinery	15.00 to 15.50
Valleys	**16.50 to 17.00**

HEAVY CAST

Boston	15.00 to 15.50
Buffalo (breakable)	**13.00 to 13.50**
Cleveland	**12.50 to 12.75**
Detroit (automobile) (net tons)	**17.50 to 18.50**
Eastern Pennsylvania	15.50 to 16.00
New York (dealers)	**12.00 to 12.50**
Pittsburgh	14.00 to 14.50

MALLEABLE

Boston, railroad	**14.50 to 15.00**
Buffalo	14.75 to 15.25
Chicago, agricultural	**13.00 to 13.50**
Chicago, railroad	14.50 to 15.00
Cincinnati, railroad (dealers)	13.00 to 13.50
Cincinnati, agricultural (dealers)	12.00 to 12.50
Cleveland, agricultural	**15.00 to 15.50**
Cleveland, railroad	**15.50 to 16.00**
Detroit, auto	15.50 to 16.00
Pittsburgh, railroad	16.00 to 16.50
St. Louis, agricultural	**12.50 to 13.00**
St. Louis, railroad	13.50 to 14.00

Miscellaneous Scrap

RAILS FOR ROLLING

5 feet and over

Birmingham	**13.00 to 14.00**
Boston (dealers)	**10.50 to 11.00**
Buffalo	16.00 to 16.50
Chicago	15.00 to 15.75
Eastern Pennsylvania	16.00
New York	13.00 to 13.50
Pittsburgh district	17.00 to 17.50
St. Louis	15.50 to 16.00

LOCOMOTIVE TIRES

Chicago, No. 1	16.00 to 16.50
Chicago, cut	15.00 to 15.50
St. Louis, No. 1	**14.25 to 14.75**

LOW PHOSPHORUS PUNCHINGS

Chicago	14.00 to 14.50
Pittsburgh	17.50 to 18.00

Scrap

Small Movement and More Strength but Market Lacks Sufficient Buying Support

EXPECTANCY and readiness to move on support by the general market is seen in iron and steel scrap. Some advances have been made in prices, in a small way. Dealers are uncertain of the future and hesitate to sell large tonnages for future delivery at present levels. Sales are confined to small lots available for immediate delivery.

Chicago, Aug. 30.—Fair buying of iron and steel scrap by consumers is taking place but individual sales are small. This buying, while of fair proportion in the aggregate, has little effect on prices at consuming points. A steelworks consumer bought a moderate tonnage of heavy melting steel at $12.75, and another at $12.50.

Boston, Aug. 30.—There have been further drops in dealers' buying prices during the week and some slight increase in activity.

New York, Aug. 30.—Further revisions have been made in scrap dealers' buying prices here, grate bars, yard steel, skeleton steel and turnings being advanced 25 to 50 cents a ton. These advances have been based largely on small scattered consuming orders, and reflect in part the recently noted advances at Harrisburg, Pa. One item being purchased in fair quantities for this point, but at unchanged prices, is heavy breakable cast, on which dealers are paying $15, delivered.

Philadelphia, Aug. 30.—A consumer of scrap at Harrisburg has paid $12 delivered, for borings and $11.50 for bundled sheets, representing a 50-cent advance. The tendency is higher in some grades.

Buffalo, Aug. 30.—A minor movement of scrap specialties is taking place but heavy melting steel continues quiet. Some specialties have sold at advanced prices, although the upward movement was limited to fractions.

Pittsburgh, Aug. 30.—Scrap market conditions are too uncertain for dealers to sell short, and not many orders are being placed, with mill buying interest practically absent. For heavy melting steel mills are offering to pay no higher than $15.25, but some dealers will pay up to $15.50 against orders taken some time ago. While in Youngstown, O., $13 is paid for short shovel turnings, nobody here will pay more than $11.50. That grade and heavy breakable cast, now weaker and quoted at $14 to $14.50, will doubtless show more strength if the coal strike amounts to anything. After a period of inactivity, malleable grades are somewhat stronger on the basis of small-lot sales.

Cleveland, Aug. 30.—The iron and steel scrap trade has fallen into a pocket from which it probably will not emerge until after Labor Day. Melters are taking all of the material due them but are making few fresh commitments. Recent bullish sentiment has subsided somewhat, since melters were not impressed. Heavy melting steel is unchanged at $13.75 to $14.25, with dealers covering at $14. August consumption of scrap in this district has probably been lower than the July rate.

Detroit, Aug. 30.—Iron and steel scrap is marking time. While considerable tonnage is moving it is mostly on old orders. Inquiries evidence considerable interest on the part of large consumers and promises good business in September.

Cincinnati, Aug. 30.—Little change in prices, movement or outlook in the scrap market is met by dealers. Mills are still out of the market except for small lots. Buyers are seeking large tonnage contracts but at prevailing prices, or a little above. Sellers are not willing to sell at the present market.

St. Louis, Aug. 30.—Iron and steel scrap continue strong, with specific price advances recorded on several imoprtant items. While purchasing enthusiasm is still largely with the dealers, buying by consumers is broadening and gaining momentum from day to day. Mills are fairly busy, and the same is true in lesser degree of foundries and most machine shops.

That scrap is needed is indicated by the scattered buying of small lots, all for prompt delivery. Purchasing agents, however, are endeavoring to ward off any general price advance.

Birmingham, Ala., Aug. 30.—Increased activity, though the total is not extensive, is again reported. Heavy melting steel, at $10.50 per ton, is moving freely.

The Carnegie Steel Co. has requested federal permission to construct a transmission line across the Monongahela river above dam No. 2, between North Braddock and Duquesne, Pa.

Sheets

Market Listless in Absence of Automotive Demand—Prices of Some Grades Reported Shaded

WITH large demands from the automobile industry still in abeyance, the sheet market is confined to miscellaneous consumers, few of which are taking normal tonnages. Fewer specifications have been received and valley mill operations have receded slightly. Reports are heard of shading on blue, black and galvanized, but important producers are holding to the full schedule.

SHEET PRICES, PAGE 520

Youngstown, O., Aug. 30.—Sheet specifications are scarcer this week than last. On Monday 57 out of 127 independent mill units began operating. This compares with 89 units that started on Monday a week ago. Three plants are entirely down at Niles, O., but another plant has two more units going this week than last. Hesitation of the automotive industry is exerting a dampening effect upon the industry, although others users such as barrelmakers and furniture manufacturers continue to take fair tonnages. While admitting disturbing rumors of price concessions have come from other districts, especially on common black and galvanized sheets, producers here continue to quote the regular schedule: 3.00c, Pittsburgh, on black, 4.25c on autobody, 2.25c on blue annealed and 3.85c on galvanized.

Cleveland, Aug. 30.—Spotty specifications marked trading in sheets during the week. Automotive demand uniformly was confined to small fill-in lots, presumably for fabrication into bodies for cars already on order. Although some shading in autobody under 4.25c, Pittsburgh, for Detroit delivery was reported, this was regarded as involving only one small mill. One maker reported better demand for furniture stock in the past week, on which grade 4.15c, Pittsburgh, is a firm level. Black sheets are holding at 3.00c, Pittsburgh, with demand confined to fill-in lots. Galvanized is steady at 3.85c. Blue annealed, on heavy gages of which competition from plates still is encountered, remain unchanged at 2.25c, Pittsburgh, for No. 10 gage.

New York, Aug. 30.—The improvement in sheet buying which characterized the early part of August has disappeared and the present market is dull. Certain large consumers who were expected to place considerable tonnage before the end of August have postponed action.

Chicago, Aug. 30.—Sheet mill operations are slightly easier at 70 to 75 per cent for the district. Only ten days' to two weeks' business is ahead of rolling schedules. Buying by the miscellaneous manufacturing trade in the Chicago district is active. Be-

cause of the price situation in the Southwest, Chicago mills are not seeking to take important tonnages for flood relief, this business going largely to southern producers. Books have not been opened for fourth quarter. Mills report the prices firm at 3.10c, Gary and Indiana Harbor, for No. 24 black; 3.95c for No. 24 galvanized; and 2.35c, mills, for No. 10 blue annealed.

St. Louis, Aug. 30.—Sheet producers and distributors report conditions fairly satisfactory. Specifications from the general manufacturing trade are good. Prices are firm.

Pittsburgh, Aug. 30.—With intermittent buying of small lots of sheets for quick shipment, the market is practically unchanged from a week ago. Demand expected to materialize by this time has not appeared. The agricultural implement trade alone seems to be anticipating its needs. The electrical sheet business is normal for this time of the year. Last year's tonnage, the largest on record, probably will not be exceeded this year. Some buyers of blue annealed sheets claim to be able to purchase below 2.25c, and users of galvanized sheets say they are able to do better than 3.85c. Maintenance of these and of the other market quotations, however, namely 3.00c on black and 4.25c on full finished, seems to be the watchword all along the line, and the quoted levels are adhered more generally than at any time during the past 10 months. Here and there some tonnage may be added to existing contracts or some freight rates may be absorbed, but no direct quotations below the market prices are encountered. The Ford Motor Co.'s delay in bringing out the new car is given as reason for the lack of full-finished business. Some camouflaged Ford business has been booked for parts makers, but not any tonnage sufficient for production of the new model. Average sheet mill operations continue around the level of the American Sheet & Tin Plate Co., namely 70 per cent.

Boston, Aug. 30.—There has been no change in the local demand for sheets. Prices are holding firm; blue annealed at 2.25c, Pittsburgh; black at 3.00c and galvanized at 3.85c.

Buffalo, Aug. 30.—Sheet prices are firm, black holding at 3.00c, Pittsburgh, and galvanized at 3.85c. Buying is steady, although tonnages are held down. Mills in this district are running slightly over 75 per cent.

Philadelphia, Aug. 30.—Sheet specifications have gained in some quarters but slumped in others, so the net volume is unchanged. Comparatively little new business is noted, but full prices are being obtained. Eastern mills are operating at 70 to 85 per cent.

M. A. Oglesby, New York, representing the bureau of explosives of the American Railways association, will give a lecture in Pittsburgh, Sept. 28, on "Explosives." All railroad employes are invited. The lecture will be under the auspices of the Baltimore & Ohio railroad.

Tin Plate

New Demand Is Slow—Operations at 70 to 75 Per Cent

TIN PLATE PRICES, PAGE 520

Pittsburgh, Aug. 30.—Crop failures and delays and the slow run of salmon make it seem likely that all the tin plate made up into cans for use this year will not be utilized. However, as usually is the case when final returns are in and readjustments have been made, excesses in some directions will practically make up the lack in others, and thus fairly even balance be maintained. History may repeat itself and if 1927 proves to be a poor tin plate consuming year, 1928 will more than make up the deficiency. Between 70 and 75 per cent is the general operating average among tin plate mills, and from $5.35 to $5.50 are the prices quoted. Canmakers seem unable to line up anticipated specifications for early next year's requirements.

Boston, Aug. 30.—A large local factor in the tin plate market reports sales of four to five carloads in the past week.

Youngstown, O., Aug. 30.—Further information coming from the Pacific Northwest indicates one of the disturbing factors in the present tin plate situation is the failure of the present salmon run. Fish have delayed their annual migration and the season now is three weeks behind schedule. Indications point to a smaller pack. One important packer this week has closed down three factories, due to lack of fish.

In this district, small consumers of tin plate are quoted $5.50 per base box, Pittsburgh, but price irregularities continue to crop out every once in a while.

Busy with River Craft

Pittsburgh, Aug. 30.—The Midland Barge Co. will build a tow boat 145 feet long, 32 feet wide and 5.6 feet deep for E. T. Slider, New Albany, Ind. The barge company will soon launch the first of four sections for drydocks to be delivered to the International Petroleum Co. in South America. The first four of 20 steel barges for the upper Mississippi barge line are nearing completion.

Will Sell Hanna Iron

The Hanna Furnace Co. has authorized the sale of its "Buffalo" brand of pig iron by Rogers Brown & Crocker Bros. Inc. in New England, New Jersey and contiguous territory.

Pipe

Mills Working Off Gas and Oil Line Backlogs — Cast Market Duller and Prices Weaker

PIPE mills are operating about 60 per cent of capacity, but are fast diminishing the small backlogs of gas and line pipe remaining. New jobber business is smaller than shipments. Cast iron pipe was less active during the week, few large transactions being noted. Prices continue weak, with down to $28, Birmingham, bid on Chicago delivery. Municipal buying is light.

PIPE PRICES, PAGE 520 AND 564

Pittsburgh, Aug. 30.—Pipe mills are commencing to work out of their backlogs of gas line sizes and other accumulations. They fast are reaching a point where they need additional tonnage. In the absence of inquiries from the oil fields, it takes a vast number of the small orders coming through from jobbers to satisfy the capacities thus becoming disengaged. Notwithstanding this condition, prices are well maintained. Occasionally a jobber will order a few carloads at a time, but more often a single carload at a time satisfies his needs. Pipe mills average about 60 per cent in operations.

Seamless tube mills are receiving a little more business, but delays in purchasing by automobile producers deprive them of orders which had been expected by this time.

Boston, Aug. 30.—Pipe business is good although there are few municipal inquiries. Private orders are running in lots of from one to five carloads and aggregate a good tonnage. Prices still are weak on the large sizes but remain firm on sizes 12-inch and under.

New York, Aug. 30.—While some interest is being manifested in cast pipe by the public utility companies, municipal inquiry continues slack and general sluggishness prevails. Prices over the past week have been lopped off another $1.

Chicago, Aug. 30.—Numerous small orders for cast iron water pipe continue steady while large awards are scarce, particularly in municipal lettings. The volume of small orders this year makes the aggregate business for makers generally several thousand tons ahead of the corresponding period last year. Some makers report that individual orders are about four times as numerous as was the case a year ago. The bulk of the small business is going at $30 to $32

for 6 to 24-inch. United States Cast Iron Pipe & Foundry Co. was awarded 570 tons of 8-inch pipe by Chicago on its low bid of $28, base, Birmingham, or $36.20 delivered. Options will increase this award to about 1100 tons. Deliveries can be made in two to three weeks on most grades.

Birmingham, Ala., Aug. 30.—A few cast iron pipe lettings are being reported and keen competition is noted in obtaining the business, quotations being low. Production has eased off considerably in the last few weeks. The open market still is given as $30 for 6-inch and over sizes, with reports still heard of concessions.

CONTRACTS PLACED

1600 tons, 24-inch pipe and smaller, Baltimore, placed, the contract reported going to the United States Cast Iron Pipe & Foundry Co.

1000 to 1100 tons, 8-inch pipe for Chicago, to United States Cast Iron Pipe & Foundry Co.

200 tons, 6 to 8-inch water pipe for Attleboro, Mass., to United States Cast Iron Pipe & Foundry Co.

200 tons, 6-inch pipe for Newton, Mass., to R. D. Wood & Co.

144 tons, 4 and 14-inch class B Alhambra, Calif., to National Cast Iron Pipe Co.

118 tons, L. I. D. No. 4485 and 4483, street improvement work, Seattle, to unnamed interest.

100 tons, 4 to 12-inch centrifugal pipe for sewage disposal plant, Walla Walla, Wash., to United States Cast Iron Pipe & Foundry Co. and Pacific States Cast Iron Pipe Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

6000 tons, chiefly 24 to 30-inch cast pipe, Hagerstown, Md.; bids asked.

1304 tons, 6 to 16-inch class B and S, Pasadena, Calif; bids in Sept. 1.

781 tons, 8 to 16-inch class B, Burlingame, Calif.; bids rejected and pipe will be purchased in open market.

500 tons, 6 to 16-inch water pipe, Putnam, Conn.; bids in Sept. 8.

500 tons, Milliners' building, Chicago; Dailey Construction Co., St. Louis, sub-contractor.

500 tons, Medinah Athletic club, Chicago; W. W. Ahlschlager, Chicago, architect.

400 tons, 6 and 8-inch pipe, for Kenosha, Wis.; bids opened Aug. 29.

315 tons, 4 to 10-inch class B, El Segundo, Calif.; bids in Sept. 16.

156 tons, 6 to 10-inch class C, improvement to Twenty-seventh street, San Diego, Calif.; bids opened.

100 tons, high school, Downers Grove, Ill.

Will Build Open Hearths and Sheet Bar Mill

Work on a new sheet bar mill will be started soon at the Kokomo division of the Continental Steel Corp., Kokomo, Ind., according to an official of the corporation. Two new open-hearth furnaces, in addition to the three originally planned, will be constructed. The new mill will provide sheet bars for the Superior Sheet Steel Co., Canton, O., and the Chapman-Price Steel Co., Indianapolis, subsidiaries of the corporation. The machinery in the wire mill at Kokomo, Ind. has been transferred to a new plant and the factory now has a capacity of 100 tons of fencing daily.

Bars

Better Buying in East as Deliveries Extend — Chicago Mills Booking Little

WITH mill backlogs in the Chicago district dwindling as steel bar shipments exceed new tonnage, mills in the East have experienced an increase in demand. At Pittsburgh deliveries have changed from prompt to 10 days or two weeks and buying further ahead is being done. Prices are uncertain, though an effort is being made to establish 1.85c Pittsburgh, as the minimum.

BAR PRICES, PAGE 520

Chicago, Aug. 30.—Demand for bar mill products is leading in heavy finished steel lines. Specifications, which are at the rate of the past two or three weeks, run close to shipments. On the other hand, the rate of sales is dwindling and falls below shipments. As in other finished steel lines, bar deliveries can be made promptly. Steel producers continue to be cheered by the implement outlook. Probabilitites are seen that the next few weeks will bring heavier specifications from farm equipment makers. The road-building machinery industry gives indications of losing its seasonal identity, and a more even demand for steel is likely from that industry.

Rail steel bars are in moderately heavy demand from farm implement makers, bed manufacturers, and the building industry. The autumn rail steel fence post business is getting under way. Specifications are well enough in hand to assure double turn operations at both Chicago Heights mills for some time. Rail steel bars are quoted at 1.90c, Chicago.

Soft steel bars now are quoted at 1.90c to 2.00c, Chicago. Prices are based largely on 1.90c, Chicago, when competitors' freight rates must be equalized in territory outside the Chicago switching district. This includes business placed north of the Chicago district which formerly was held by Chicago steel producers at 2.00c.

New York, Aug. 30.—A firmer tone is reflected in the steel bar market here and mills have refused to take orders at less than 1.80c, base, Pittsburgh. In several cases large tonnages were offered at 1.75c but the mills would not take them at this figure. Despite this firm tone, the volume of business has been showing a somewhat downward tendency as compared with early August. Iron bars have developed some weakness. Desirable specifications for ornamental and structural iron work have been selling as low as 1.75c, base, Pittsburgh. The full range of prices continues 1.75c to 1.90c, base, Pittsburgh, and as a rule 1.80c is the minimum.

Pittsburgh, Aug. 30.—Merchant steel bar orders are growing slightly more numerous. Users are confronted by a siutation which up until now has been strange to them. They have been accustomed to obtaining immediate shipments out of stock on most every size wanted; now they are having to wait one week, 10 days or even two weeks since the mills are scheduled ahead to that extent on many sizes. That this situation will become more aggravated as the fall demand expands is the common expectation and it is becoming increasingly necessary for bar consumers to anticipate their needs. Bar mills are being operated at about 60 per cent. More talk is heard about making 1.85c an absolute minimum, but 1.80c has not disappeared.

Boston, Aug. 30.—Market for bars remains quiet and the volume of orders fell below that of last week. Price remains 1.80c to 1.85c, Pittsburgh.

Iron Ore

Lake Shipments Fall Behind 1926—Total Estimated at 55,000,000 Tons

IRON ORE PRICES, PAGE 557

Cleveland, Aug. 30.—The Lake Superior Iron Ore association today estimated the tonnage of iron ore moved down the lakes in August totaled 8,750,000 tons. This compares with 8,609,082 tons in July. The amount in August, 1926, was 10,709,260 tons. To Sept. 1, 1927, the total is approximately 35,130,505 tons, against 35,609,-152 tons in the same period last year. Operators believe the season's total movement will be about 55,000,000 tons compared with 60,000,000 last year. The market is dull, inquiries being limited to small fill-in lots.

Ore Leads Imports

Philadelphia, Aug. 30.—Ore again predominated in the imports at this port in the week ending Aug. 27. Iron ore was received from Algeria to the extent of 6599 tons, and manganese ore imports included 1500 tons from British India and 12 tons from Germany. Pig iron imports comprised 500 tons from France and 403 tons from British India. Structural shapes imports included 135 tons from France and 76 tons from Belgium. From Sweden 64 tons of steel bars were received.

Structural Shapes

Slackening Demand Reported from New York but Improved Contracting in Other Districts Maintains Market—Prices Variable

AWARDING of 6000 tons for a beach hotel in Chicago, 3000 tons for a New Jersey bridge, 2700 tons for a Los Angeles building reflect the developments of the market week in structurals. New York demand has flattened out somewhat but better buying in other districts has tended to maintain a high contracting rate. New York Central railroad is reported to have awarded 10,000 tons of shapes for work in Buffalo. Inquiries include numerous large projects scheduled to proceed to closing before late fall. Bids are being asked again on 10,000 tons for a Cleveland bridge.

Little variation in prices from the levels of the preceding week were noted. Chicago makers are meeting eastern competition and are quoting 1.90c.

STRUCTURAL SHAPE PRICES, PAGE 520

New York, Aug. 30.—The structural demand in this city has flattened out, although in outlying territories business appears to be sustained. A number of bridge jobs are noted. A feature here is the re-advertising of the Nassau street subway, involving 8500 tons. Prices are at least being maintained on both fabricated material and plain shapes; on the latter, a range of 1.70c to 1.80c, Pittsburgh, is becoming more representative.

Boston, Aug. 30.—Although a number of fair sized jobs have been figured or are being figured there were no structural awards this week of consequence except the cement plant for the Lawrence Cement Co., Thomaston, Me., totaling about 700 tons.

Philadelphia, Aug. 30.—New structural steel demand is rather slow, eastern mills operating somewhat lower. Prices continue to reflect a wide spread, depending upon the character of business. The feature of the structural market is the extent to which the Carnegie Steel Co. beam sections have featured in recent lettings. At least 11 jobs aggregating about 10,000 tons of structural steel let in this district in the past couple of months have had these sections specified. Shape prices usually are 1.70c to 1.80c, Pittsburgh, although lower is done on special tonnages.

Pittsburgh, Aug. 30.—Numerous inquiries for small lots of structural shapes, with a few large tonnages, make up current activity in the market. The price is held firmly at 1.80c, mills disclaiming having dropped to 1.75c. Figures realized on material fabricated and erected still border too much on the loss side to be attractive, and some shops are refusing to bid. Indicative of demoralized conditions, one contractor recently awarded a job involving between 40 and 50 tons of steel had to send for a copy of the plans after he had received the award, having bid blindly for the work.

Chicago, Aug. 30.—Competition is extremely sharp for the small amount of structural business that now appears. Eastern business is being offered in this market and delivered prices for fabricated material have been cut still further during the past week. The largest award during the week was 6000 tons for the Bryn Mawr Beach hotel, Chicago. Fabricators are obtaining plain material at 1.90c to 2.00c, Chicago.

Buffalo, Aug. 30.—Fall movement of structural shapes gives promise of being fairly brisk. An unconfirmed report of placement of a 10,000-ton order for Lackawanna production was heard here this week. There is considerable small and fair sized business pending but architect's inquiries are slow in reaching fabricating contract stage.

Cleveland, Aug. 30.—Structural steel activity in the Cleveland district continues confined to small lots. A few projects taking more than 100 tons each appear infrequently. It is reported bids are to be asked shortly on the Eagle avenue viaduct of the Cleveland Union Terminals project, this unit requiring about 10,000 tons. Plain material is firm at 1.99c, Cleveland, or 1.80c, Pittsburgh. Fabricators are operating from 50 to 100 per cent of capacity, those working at the higher rate filling in schedules with miscellaneous small work.

Awards Compared

	Tons
Awards this week.....	49,264
Awards last week	35,107
Awards two weeks ago.....	33,870
Awards this week in 1926.....	68,535
Average weekly awards, Aug.	40,890
Average weekly awards, 1927	32,845
Total awards to date, 1926....	1,017,817
Total awards to date, 1927	1,266,001

CONTRACTS PLACED

10,000 tons, New York Central railroad station, underground passageways, etc., Buffalo, reported awarded to Bethlehem Steel Co.

6000 tons, Bryn Mawr Beach hotel, Sheridan road and Bryn Mawr avenue, Chicago, to American Bridge Co.

3000 tons, vehicular bridge, Trenton, N. J., placed, the contract reported going to the American Bridge Co.; S. S. Thompson & Co., Redbank, N. J., general contractors.

2700 tons, Earle C. Anthony building, Tenth and Hope streets, Los Angeles, to Llewellyn Iron Works.

2000 tons, building for De Paul university, Chicago, to American Bridge Co.

1950 tons, building for the Libby-Owens Sheet Glass Co., Toledo, O., to Massillon Bridge & Structural Co.

1800 tons, addition to O'Connor-Moffat building, San Francisco, through Dinwoodie Construction Co., to American Bridge Co.

1200 tons, Lehigh Valley railroad bridge, Newark, N. J., to the Bethlehem Steel Co.

1000 tons, plant addition for the General Electric Co., formally awarded to the American Bridge Co.; this project was noted as informally placed some time ago and is understood to be the first sizable building along the Atlantic seaboard to be welded instead of riveted.

1000 tons, column cores for loft building, Philadelphia, to Shoemaker Bridge Co.

900 tons, three bridges for the Southern railway, placed; reported one bridge of 400 tons went to the Virginia Bridge & Iron Co.

900 tons, high school, Altoona, Pa., to Jones & Laughlin Steel Corp.

850 tons, Atmospheric Nitrogen Corp. plant addition, Hopewell, Va., to an unnamed fabricator.

850 tons, transmission towers for the Philadelphia Electric Co., Philadelphia, to Blaw-Knox Co.

850 tons, building for the Ward Baking Co., St. Louis, to the Lehigh Structural Steel Co.

800 tons, motion picture theater, Pittsburgh, to the American Bridge Co.

800 tons, apartment at East Eighty-sixth street, New York, to the Harris Structural Steel Co.

800 tons, field house for Butler college, Indianapolis, to Central States Bridge Co.

700 tons, chemistry building, University of Pennsylvania, Philadelphia, to the Shoemaker Bridge Co.

700 tons, cement plant for Lawrence Cement Co., Thomaston, Me., to New England Structural Co.

700 tons, building for Chicago Evening Post Building Corp., Wells street and Wacker drive, Chicago, to American Bridge Co.

625 tons, Girard avenue bridge, repairs, Philadelphia, to Belmont Iron Works.

600 tons, state bridge, New Jersey, to Fort Pitt Bridge Works.

600 tons, toll bridge over the Columbia river, at Brewster, Wash., to Wallace Bridge & Steel Co.

550 tons, municipal building, Gary, Ind., to American Bridge Co.

500 tons, bridges for Denver & Rio Grande Western railroad, to American Bridge Co.

500 tons, Rancocas creek bridge, Atlantic City, N. J., to Fort Pitt Birdge Works.

450 tons, municipal lighting plant at Hagerstown, Md., to Dietrich Bros.

400 tons, junior high school addition, Philadelphia, to Robinson Iron & Steel Co.

400 tons, sales and service building, Philadelphia, to Cantley & Co.

400 tons, first unit, Pennsylvania railroad subway, Philadelphia, to American Bridge Co.

400 tons, bridges for the Baltimore & Ohio railroad, to the McClintic-Marshall Co.

400 tons, miscellaneous work in Pittsburgh district, including plant extensions for Elliott Co., Ridgway, Pa., to Fort Pitt Bridge Works.

400 tons, Y. M. C. A. building, Reading, Pa., to the Bethlehem Steel Co.

400 tons, Catholic church, New York, to A. E. Norton Inc.

360 tons, Mattawan creek bridge, New Jersey, to American Bridge Co.

325 tons, Mutual Stores building, Oakland, Calif., to Dyer Bros.

300 tons, two bridges, Reading railroad, Sellersville, Pa., to the American Bridge Co.

300 tons, mill addition for the Dexter Sulphite

& Paper Co., Dexter, N. Y., to James McKinney, Albany, N. Y.
300 tons, Oxford theater, Philadelphia, to Fort Pitt Bridge Works.
300 tons, additional for Automobile club, Philadelphia, to Shoemaker Bridge Co.
300 tons, Pennsylvania railroad bridge, Philadelphia, to the American Bridge Co.
290 tons, state highway, Huntington, Mass., to Boston Bridge Works.
250 tons, building for the Bennett Biscuit Co., New York, to the Harris Structural Steel Corp.
250 tons, miscellaneous work including addition to Haller Baking Co. plant, through D. C. Riffle Co., contractor, and bank building for Citizens' Trust Co., Bellevue, Pa., to the Guibert Steel Co.
182 tons, Payette river bridge, Boise, Idaho, to Virginia Bridge & Iron Co.
150 tons, apartment, Van Ness and Eddy street, San Francisco, to Central Iron Works.
150 tons, General Motors Corp. garage at Milford, Mich., through Austin Co. to Massillon Bridge & Structural Co.
150 tons, bridge for the New York Central railroad, to the Bethlehem Steel Co.
150 tons, building for Cleveland Punch & Shear Co., Cleveland, to T. H. Brooks Co.
146 tons, miscellaneous small jobs in Ohio district, to Massillon Bridge & Structural Co.
135 tons, race track, Bowie, Md., to Dietrich Bros.
101 tons, sales and service building for Utility Chevrolet Sales Co., Cleveland, to Fort Pitt Bridge Works.
100 tons, Noard Hosiery mill building, York, Pa., to McClintic-Marshall Co.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

10,000 tons, Eagle avenue viaduct, Cleveland, for Cleveland Union Terminals Co., Cleveland; bids being taken.
10,000 tons, estimated tonnage for Grant building, Pittsburgh; bids about to be asked.
8500 tons, Nassau street subway, New York; new general contractors' bids to be opened Sept. 15.
2000 tons, Baldwin Locomotive Works office building at Eddystone, Pa.; general contract to Turner Construction Co.
1200 tons, city section of Public Safety building, Milwaukee; bids close Sept. 8.
1200 tons, Foreman & Clark building, Seventh and Hill streets, Los Angeles; bids being received.
1000 tons, Arena, Post and Steiner streets, San Francisco; bids being taken.
1000 tons, approximate, apartment, 333 East Sixty-eighth street, New York; bids asked.
800 tons, Cedar-Biddle street bascule bridge at Milwaukee; Milwaukee Bridge Co. low bidder at $148,795 on steel; Edward E. Gillen Co. low on general construction at $507,538; total $656,333.
750 tons, Y. M. C. A. hotel, Turk street, San Francisco; Judson Mfg. Co. low bidder.
700 tons, Loew theater, Providence, R. I.; bids asked.
700 tons, two bridges for Chicago, Milwaukee & St. Paul railroad at Chillicothe, Mo., and Davis, Ill.; bids asked.
600 tons, Women's City club, Oakland, Calif.; bids being taken.
600 tons, St. John's hospital, Brooklyn, N. Y.; bids asked.
500 tons, highway bridge for the state of New York; bids asked.
500 tons, power house to be erected in Texas; bids asked through Stone & Webster, Boston.
500 tons, canal lift bridge at Houston, Tex.; steel bids in.
460 tons, transit shed for the Atchison, Topeka & Santa Fe railroad, in California; plans prepared.
325 tons, four bridges for the Pennsylvania railroad; bids asked.
320 tons, bridgework for Great Northern railroad; bids asked.
300 to 400 tons, bridge for the New York, Susquehanna & Western railroad, Franklin, N. J.; bids asked.
300 tons, dam No. 6 Ohio river; Independent Bridge Co. low bidder.
270 tons, two spans over Yakima river, Washington; bids opened.
250 tons, galvanized structural steel for Los Angeles; Minneapolis Steel & Machinery Co. low bidder.
250 tons, First National Bank, New Amsterdam, N. Y.; bids asked, previously noted as pending.
225 tons, St. Thomas' seminary, West Hartford, Conn.; bids asked.
150 tons, transmission line, Modesto irrigation district, Modesto, Calif.; bids in Sept. 1.
140 tons, hospital, Eureka, Calif.; bids opened.
120 tons, apartment, Ellis street, San Francisco; bids being received.
120 tons, Physicians building, Van Ness avenue, San Francisco; Western Iron Works low bidder.
100 tons, building for Hafner Coffee Co., 2419 Penn avenue, Pittsburgh; bids about to be asked.
Unstated tonnage, Warner library, Tarryton, N. Y.
Unstated tonnage, Masonic Temple, Plainfield, N. J.
Unstated tonnage, St. Boniface school, Seacliff, Long Island, N. Y.
Unstated tonnage, bridge across Ohio river at Paducah, Ky.
Unstated tonnage, 12-story bank, Providence, R. I.; bids asked.
Unstated tonnage, Pan Hellenic building, Forty-ninth street and First avenue, New York.
Unstated tonnage, Normal school, Jersey City, N. J., bids asked; Guilbert & Bettel, Jersey City, architects in charge.
Unstated tonnage, New York Central and Grand Trunk Western railroads union station, South Bend, Ind.; track elevation work for New York Central; contract awarded Walsh Construction Co., Davenport, Iowa.

Concrete Bars

Awards More Numerous But Mostly Small—Better Outlook for Fall Business Seen

CONCRETE reinforcing bar interests are more cheerful, regarding the outlook for business within the next 30 to 60 days as better than in the past several months. Awards and inquiries are more numerous, although still mostly for small individual lots. A sufficient number of large contracts continue to appear to keep competition keen on prices in most districts.

REINFORCING BAR PRICES, PAGE 520

Chicago, Aug. 30.—Reinforcing steel bar awards are more numerous and warehouses are cheerful over the outlook for the next 30 to 60 days. Considerable road work for Cook county, Illinois highways will be awarded this summer. About 2000 tons is pending for the sewage treatment plant for the Chicago Sanitary district at Stickney, Ill. Another active project is 500 tons for the Milliners' building in the Chicago loop. Billet bar prices are holding to the minimum of 2.30c, and the maximum of 2.75c is obtained for small lots. Rail steel bar business is on the basis of 1.90c to 2.00c.

Boston, Aug. 30.—Few good inquiries are out but on the whole the concrete bar market is quiet. Prices remain 1.80c to 1.85c Pittsburgh with warehouse prices 2.70c to 2.80c.

Buffalo, Aug. 30.—Reinforcing bar demand is above seasonal proportions, due to movement of a number of small lots and interest in tonnage for late fall shipment. The price of large lots for direct shipment from mills is 2.165c, but most business is being filled from warehouse stocks at current quotations.

Pittsburgh, Aug. 30.—Inquiries appear frequently involving good lots of concrete bars. The latest calls for approximately 700 tons for a sewage disposal plant at Allentown, Pa. A few individual awards up to 450 tons are noted; one this week for that tonnage involved a bridge in Clinton county. Small scattered lots of road work likewise are being let. A decided effort is being made to establish 1.85c as a firm minimum, but 1.80c persists on large amounts.

Cleveland, Aug. 30.—Small lots of concrete reinforcing bars were less numerous in the past week than in the days preceding. Although several projects involving 100 to 200 tons are pending, action is slow in developing. New billet bars continue quotable 1.80c, Cleveland, or 1.80c, Pittsburgh. On combination mill and warehouse shipments prices are somewhat higher, but stock prices go as low as 2.20c, Cleveland. Rail steel stays at 1.65c to 1.75c, mill, without test.

Awards Compared

	Tons
Awards this week	3,759
Awards last week	5,294
Awards two weeks ago	8,295
Awards this week in 1926	8,731
Average weekly awards, Aug.	6,349
Average weekly awards, 1927	5,611
Total awards to date, 1926	224,156
Total awards to date, 1927	194,549

CONTRACTS PLACED

450 tons, state highway bridge, Clinton county, Hyner, Pa., to Kalman Steel Co.
400 tons, high school, Hyde Park, Mass., to Joseph T. Ryerson & Son, Inc.
400 tons, Pennsylvania-Dixie job, Buffalo, through Turner Construction Co., New York, to Jones & Laughlin Steel Corp.
375 tons, for new Municipal court building, St. Louis, to Laclede Steel Co.
314 tons, Fourth street bridge, Los Angeles, to unnamed interest.
300 tons, first unit of State-Line power plant, Indiana Harbor, Ind., to Kalman Steel Co.
200 tons, miscellaneous road work jobs in Ohio, Pennsylvania and West Virginia, to Concrete Steel Co.
200 tons, building for Halsey Bros. Co., Chicago, and foundation work for Chicago Evening Post building Chicago, to Joseph T. Ryerson & Son Inc.
160 tons, plant for Libby Owens Sheet Glass Co., Toledo, O., to Bourne-Fuller Co.
125 tons, Y. M. C. A. building, Middletown, Conn., to Truscon Steel Co.
115 tons, Congress street bridge, Chicago, to Jones & Laughlin Steel Corp.
115 tons, for Goldman building, East St. Louis, Ill., to Laclede Steel Co.
105 tons, building for Murdock-Chevrolet Co., Pittsburgh, to Kalman Steel Co.
100 tons, building at Hartford, Conn., to Truscon Steel Co.
100 tons, Girard avenue bridge repairs, Philadelphia, to Concrete Steel Co.

100 tons, three small jobs in Pittsburgh district, including garage at Bridgeville, Pa., to Truscon Steel Co.
100 tons, hospital, Bush and Octavia street, San Francisco, to unstated San Francisco jobber.
100 tons, warehouse, Pasadena, Calif., to unstated company.

CONTRACTS PENDING

New Inquiry and Developments on Projects Previously Reported

800 tons, General Baking Co. building, Philadelphia.
700 tons, sewage disposal plant, Allentown, Pa.; bids being taken.
500 tons, building for the C. & P. Telephone Co., Wheeling, W. Va.; bids close Sept. 8.
200 to 300 tons, boys' training school, Pittsburgh; bids to be asked soon; architect, Edward B. Lee.
190 tons, Reading railroad bridge, Philadelphia.
137 tons, paving at Redlands, Calif.; bids in Sept. 19.
100 tons, Linden school addition, Pittsburgh; Thomas Pringle, architect; bids about to be asked.
100 tons, filtration plant, Grove City, Pa.; bids about to be asked.

July Machinery Exports Make Good Gain

Industrial machinery exports from the United States in July, continued upward, with shipments valued at $17,073,000, a gain of almost $3,000,000 over the corresponding month in 1926, according to figures compiled by the industrial machinery division, department of commerce. Shipments for the seven months ending in July, increased over that time in 1926 more than $14,000,000.

An increase of 100 per cent in exports of oil well machinery was noted in July, bringing the shipments for the January to July period to $11,924,000, or nearly $4,000,000 in advance of the corresponding period in 1926. Notable gains were made in shipments of metalworking machinery, with an increase of more than $500,000 for the month. Activity was evident in exports of lathes, amounting to $495,278 for July, compared with $164,308 in July, 1926. Grinding machine exports were $247,196 in July compared with $107,230 in July, 1926. Internal grinding machine exports increased to $125,766 in July from $14,238 in July, 1926.

Alloy Consumers Wait

Cleveland, Aug. 30.—Consumers of alloy steel, mostly automotive parts makers in this territory, such as forge shops, are waiting for developments in Detroit before extending their current requirements. Sales are small and few, involving just enough steel to produce parts for cars being built to meet actual demand. Prices have remained unchanged in the face of dullness locally.

By-product coke plants attached to blast furnace plants increased in number from 21 in 1913 to 39 in 1918 to 45 in 1920 to 45 in 1923 to 49 in 1926, states the federal bureau of mines.

Rails, Cars

Inquiries for 1928 Rails Cheer Market in East — Locomotives More Active—Cars Remain Slow

INQUIRIES expected shortly for 175,000 tons of rails from the New York Central and 175,000 to 200,000 tons from the Pennsylvania for 1928 delivery, bolster up flagging spirits in eastern market. Rail orders of the week at Chicago total 5000 to 6000 tons. Cars continue inactive, but locomotive prospects include 30 for Southern Pacific, 10 to 32 for New York Central, and 125 for export.

RAILROAD TRACK MATERIAL PRICES, PAGE 520

Chicago, Aug. 30.—Rail inquiry and buying show no marked improvement. Several roads have indicated they may be in the market soon for inquiries for their 1928 programs, but no definite estimates are out. Standard steel rails placed with western mills during the week totaled 5000 to 6000 tons. Several thousand kegs of spikes and track bolts were ordered and purchases of 2000 to 3000 tons of angle bars were reported. Light rails, which have been fairly active for several weeks, have slumped off.

Track fastenings business is extremely light. Only miscellaneous orders are being booked. As a result, departments engaged in track accessories production are down to a marked extent in operations. Rail mill operations in the district are at about 40 per cent.

Boston, Aug. 30.—The local market is quiet. No new specifications have as yet been issued on rails or track accessories, but the outlook is better than at this time last year.

New York, Aug. 30.—Indications are that domestic freight car awards for this month will not exceed 1000, although full returns are not as yet available. Last month awards amounted to 1970. Current demand is slack, with little in prospect for the near future. A feature is improved inquiry for locomotives. An export inquiry calls for 125.

New York Central railroad is preparing to buy its rails for 1928 and is expected to place orders within a few weeks. It is expected about 175,000 tons actually will be ordered and that additional tonnages will be optioned. The Pennsylvania railroad, which this year took a total of 225,000 tons of rails, is expected to place between 175,000 and 200,000 tons for 1928.

Pittsburgh, Aug. 30.—Light rail orders are fair in number but volume still is light because of the limited tonnages taken individually. Seldom does one take more than a single carload at a time. Most of the present orders are coming from the bituminous coal mining sections of western Pennsylvania, West Virginia, and eastern Kentucky. The $36 price is obtained.

Large inquiries for track accessories, never a part of the general scheme at this season of the year, are absent but small inquiries and orders keep up well. Chesapeake & Ohio railroad wants a fair sized tonnage of spikes and tie plates. Regular customers are able to place less-carload lots at the carload price, and accordingly are ordering that way but of course suffer on the freight rates because of this policy. Larger inquiries are expected to develop in the fourth quarter. Tie plates are quoted 2.35c, and spikes 2.80c.

CAR ORDERS PLACED

Chicago & North Western, two coaches, to Pullman Car & Mfg. Corp.
Cities Service Co., 100 tank cars, to the American Car & Foundry Co.; this was noted in last week's issue as going to an unstated builder.
Department of commerce, bureau of mines, one mine rescue car, to Hotchkiss Blue & Co. Ltd.
Great Northern, 200 box cars, to own shops.
Lehigh & New England, one gasoline electric rail motor car, to the J. G. Brill Co.
Lehigh Valley railroad, three gas-electric cars and four trailers, to Bethlehem Steel Co., American Car & Foundry Co. and Osgood Bradley Car Co., jointly, and six diners awarded Pullman Car & Mfg. Corp.
Northern Pacific, 200 flat cars, to its own shops; this railroad is now inquiring for the 200 necessary underframes.
Pettibone & Mulligan & Co., one gondola, to A. V. Konsberg.
Pittsburgh Coal Co., 200 mine cars, to Lorain Steel Co.

LOCOMOTIVE ORDERS PLACED

Chicago Belt Line railway, five locomotives, to Baldwin Locomotive Works.
Great Northern, six electric locomotives, to the Baldwin Locomotive Works and the Westinghouse Electric & Mfg. Co., to be built jointly.

CAR ORDERS PENDING

New Inquiry and Developments on Projects Previously Reported

Tennessee Coal, Iron & Railroad Co., 45 ore cars; contemplated as likely to be built in its own shops.

LOCOMOTIVE ORDERS PENDING

Alabama, Tennessee & Northern, three locomotives; bids asked.
New York Central, 10 electric freight locomotives; bids asked; option on ordering 32 additional electric locomotives is also asked.
South African railways, 125 locomotives of various types; bids asked.
Southern Pacific, 30 locomotives; contemplated.

A report of the annual proceedings of the twenty-second convention of the National Rivers and Harbors congress, held in Washington last December, is being mailed by S. A. Thompson, secretary of the congress. The report contains addresses of all the speakers.

The Market Section

Wire

Demand Continues Narrow but Prices Hold Well—Jobbers Buy Little for Stock

DEMAND for wire and its products lags, with jobbers and consumers keeping stocks low. Mills have good stocks and prompt shipment is the rule. Business is in small lots. Some shading on nails and occasional absorption of freight charges have been met but prices are relatively firm in most districts. Production is about 50 per cent.

WIRE PRICES, PAGE 520

Chicago, Aug. 30.—Inasmuch as most jobber stocks of wire and wire products are low and crop conditions indicate probable buying, it is expected that the wire market may become more active in the next 30 days. Jobber activity is light and manufacturing demand for wire products is moderate. In some recent sales of wire nails, quotations have been shaded but the leading producer reports its prices on the basis of 2.45c for bright plain wire, and $2.60, Chicago or western mills, for wire nails. Deliveries can be made promptly.

Worcester, Mass., Aug. 30.—While a well varied volume of limited orders is holding the wire market steady the expected brisk improvement is slow in developing and drawing mills continue to operate at slightly over 50 per cent. A feature is the wide spread in products specified. Buyers are taking wire close to actual needs and close to contracts. Prices remain 2.55c Worcester.

Pittsburgh, Aug. 30.—Wire products specifications have not broadened. Buyers continue to order as needed, and jobbers seek only to maintain fair sized stocks. The only price divergence is when freight rates are absorbed, and in the main the market is quoted unchanged at 2.40c for plain wire and $2.55 for wire nails. Wire plant operations do not rise much above 50 per cent.

Bolts, Nuts, Rivets

Eastern Jobbers Win Effort to Obtain Preferential Discount

NUT AND BOLT PRICES, PAGE 520

New York, Aug. 30.—Insistence by large jobbers on a lower price on bolts and nuts than small buyers, has brought about a revision in mill prices. Hereafter the 70 per cent discount will be allowed only to jobbers and large consumers, while to small consumers and dealers the discount will be only 60 per cent. This will make it possible for large jobbers to handle bolts and nuts at a profit. The volume of bolt and nut business has declined since the early part of August and this trend has been reflected in mill operations. Bolt and nut production now is not more than 50 per cent of capacity. Rivet demand continues quiet but prices are holding firmly. Some makers are asking 3.10c, base, Pittsburgh, but others continue to sell at 3.00c. However, efforts to buy under 3.00c in all cases as far as apparent meet with refusals.

Chicago, Aug. 30.—Fourth quarter contracting for bolts, nuts and rivets, while several weeks off, is expected by producers to proceed at present prices. Specifications for bolts and rivets from automotive sources are at an active rate. Specifications for bolts and nuts from farm equipment makers perhaps are a shade heavier. Structural rivets are firm at 3.10c, base, Chicago, for carload lots.

Pittsburgh, Aug. 30.—Moderate buying at unchanged price levels continues the rule in nuts, bolts and rivets. The former are quoted at 70 off list, and the latter at 3.00c, although 2.75c applies on shipments against contracts. Small rivets are quoted at 70 and 10 off, and occasionally competition develops an extra 10 per cent. Between 50 and 60 per cent is the general average rate of operation. Jobbers are ordering sparingly, and manufacturers only as needed. The automotive trade still is a relatively unimportant consumer, but is expected to improve before the beginning of the fourth quarter.

Cleveland, Aug. 30.—Specifications for bolts, nuts and rivets are showing little improvement. Business generally, however, this summer has been satisfactory, one of the leading sellers reports, although demand for rivets has not equalled that of a year ago. Current operations are 60 to 65 per cent of capacity. Prices continue firm.

Strip Steel

Mills Need Automotive Buying To Keep Production at High Point

STRIP PRICES, PAGE 520

Pittsburgh, Aug. 30.—As in other finished steel lines strip steel has suffered from delays in bringing out the Ford Motor Co.'s new model and from other companies holding back. Miscellaneous business is fairly steady but mills require the regular flow of automotive tonnage to sustain operations at anything like a profitable pace, especially in times of low prices. Price schedules of June 1 still are maintained, 2.10c on hot strips, 2.30c on hoops and bands, 3.00c on stripsheets and 3.25c on cold strips. Strip mill operations are not averaging higher than 60 to 70 per cent of capacity.

Chicago, Aug. 30.—Specifications for hot rolled strip steel continue steady. Automotive parts makers are taking most of the tonnage. Prices for wider strips are 2.20c to 2.50c. Narrower sizes are 2.40c to 2.60c.

Cold rolled strip steel specifications are slightly easier. Heavy bookings from users in second quarter filled requirements of most consumers for part of the third quarter. Consumers' stocks now are dwindling and some new buying is expected. Mill prices on cold rolled strip steel are steady at 3.25c, Cleveland.

Cleveland, Aug. 30.—Two leading sellers of strip steel in this territory claimed that the past week was one of the dullest of the summer. New buying hinges on developments in the automotive field, consumers in other industries supplying the only activity in the current market. Hot rolled strip prices are steady in the face of light buying, 2.30c, on less than 6-inch and 2.10c on 6 to 12-inch, Pittsburgh, holding firm. On cold finished strip an insufficient volume is moving to test the strength of the 3.00c, 18-ton minimum price, and 3.25c for 1 to 3-ton lots, base, Pittsburgh.

Cold Finished Steel

Delay in Automotive Tonnage Disappointing to Bar Finishers

COLD FINISHED PRICES, PAGE 520

Pittsburgh, Aug. 30.—With most automotive business still absent, cold finished bar makers are endeavoring to content themselves with piecemeal business developing in other directions. Since large automotive tonnage was expected in August, that month has proved a disappointment, but shipments have kept up well. September is expected to exceed August by 15 to 25 per cent although large tonnage is not expected much before fourth quarter. The price is unchanged at 2.20c to 2.30c, operations continuing about 60 per cent.

Plans New Blast Furnace

Construction work at the plant of the Hamilton Coke & Iron Co., Hamilton, O., formerly the Hamilton Furnace Co., has been started. The work includes the building of a new blast furnace, relining the present stack and the construction of additional by-product coke ovens. Pending a decision of the interstate commerce commission, work on the railroad over which hot metal will be taken from the stack of the Hamilton company to the Middletown, O. works of the American Rolling Mill Co., has been held up. Deeds for the right of way have been obtained. The first hot metal is to be delivered to the Middletown plant by April 1, 1928.

Nonferrous Metals

Prices Develop Firmer Tone After Appearing Weak—Business Is Quiet But Active Buying Is Expected in Near Future

Prices of the Week, Cents a Pound

	Copper, Electro delivered	Copper, Lake delivered	Copper, Casting refinery	Straits Tin, New York Spot	Straits Tin, New York November	Lead, New York	Lead, East St. Louis	Zinc, St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Aug. 24	13.12½	13.37½	12.75	64.25	64.00	6.60	6.27½	6.30	25.37½	11.50	35.00
Aug. 25	13.12½	13.37½	12.75	63.87½	63.75	6.60	6.22½	6.27½	25.37½	11.62½	35.00
Aug. 26	13.12½	13.37½	12.75	63.50	63.25	6.55	6.20	6.22½	25.37½	11.75	35.00
Aug. 29	13.25	13.40	12.87½	63.75	63.50	6.60	6.27½	6.27½	25.37½	12.00	35.00
Aug. 30	13.25	13.40	12.87½	63.62½	63.25	6.50	6.27½	6.27½	25.37½	11.87½	35.00

NEW YORK, Aug. 30.—Business in nonferrous metals the past week has been quiet. Prices were easy to weak for a time but during the past day or two there has been a definite turn toward strength and more of a feeling of confidence has developed. Shipments are of good size, with users well covered for the time being, but it is believed active buying soon will have to be done for October requirements.

Copper—Metal sold at 13.12½c, Connecticut, but on Monday this price disappeared and the market generally was called 13.25c, at which most producers had held their asking price. The export price was steady at 13.50c c.i.f. after a cut of 15 points. Producers say that every day they are able to wait now is rapidly turning the situation in their favor, as requests for early shipment show that users are none too well protected on requirements.

Zinc—Stocks at the middle of August were more than 1000 tons less than at the beginning of the month and down about 5500 tons since July 1. This news made the market a little firmer after it had sold down rapidly in the few previous days to 6.22½c East St. Louis for prime western. Buying has been light, mostly of prompt September metal.

Tin—Buying by users has been extremely light but on some days there has been trading by dealers. The market has had wide swings lately but with little net change, now being stronger after a rapid drop. The expectation is statistics will be strong at the end of this month.

Lead—Shipments are large but the market weak. American Smelting & Refining Co. today cut lead prices 10 points to 6.50c.

Coke Holds Output Rate But Coal Drags

Beehive coke production in the week ended Aug. 20 was 108,000 net tons, which was identical with the preceding week, but a decline of 74,000 tons from the comparable week of 1926, according to the United States bureau of mines. For the calendar year to date, production of beehive coke stands at 5,209,000 tons, compared with 7,869,000 tons a year ago. The daily average production for 1927 was 26,000 tons, against 40,000 tons last week.

The bituminous coal total of 9,142,000 tons in the week ended Aug. 20 brought the year's production up to 336,973,000 tons. Bituminous coal production is now running 1,400,000 tons behind the corresponding weeks of last year. A year ago the bituminous coal production in this country was 340,470,000 tons.

Mercury Quiet, Easy

New York, Aug. 30.—Quicksilver is quiet and easy at $121 a flask.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
Yellow brass (high)	18.25
Copper, hot rolled	22.00
Lead full sheets (cut ¼c more)	10.25
Zinc, (100-pound base)	10.00
Aluminum, bright flat, up to 10 gage	34.50
SEAMLESS TUBES	
Yellow brass (high)	23.12½
Copper	24.00
RODS	
Yellow brass (high, free turning)	16.00
Naval brass	18.75
WIRE	
Copper, small lots	15.00
Yellow brass (high)	18.75

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.75 to 9.00
Chicago	9.25 to 9.50
Cleveland	9.00
HEAVY YELLOW BRASS	
Chicago	6.75 to 7.00
Cleveland	7.00
ZINC	
New York	3.75 to 4.00
Cleveland	3.50
HEAVY COPPER AND WIRE	
New York	10.25 to 10.50
Boston	10.50 to 10.75
Chicago	10.00 to 10.50
Cleveland	10.75 to 11.00
RED BRASS BORINGS	
New York	8.00 to 8.25
YELLOW BRASS TUBING	
Cleveland	7.50
LIGHT COPPER	
New York	9.00 to 9.25
Chicago	9.25 to 9.50
Cleveland	9.00
LIGHT BRASS	
Boston	5.25 to 5.50
Chicago	6.25
Cleveland	5.50
ALUMINUM	
Clippings, Cleveland	19.00
Borings, Cleveland	9.00
Cast, Cleveland	14.00
Cast, Boston	13.00 to 13.50

Secondary Metals

Remelt aluminum No. 12	18.50 to 19.50
Brass ingot, 85-5-5-5	12.00

Coke By-Products

Fertilizer Trade Is Covering Sulphate of Ammonia Needs

New York, Aug. 30.—Business in sulphate of ammonia is featured by buying by some fertilizer manufacturers, late in entering the market for their seasonal requirements. Prices are somewhat higher, now holding at $2.25 to $2.35, delivered, although the inside figure is the more nearly representative. Light oil distillates are unchanged. Naphthalene is showing little better life, with some buying by the drug trade for the fall season; however, business is far from brisk and prices are virtually unchanged at 5½ to 6½ cents, works, for flakes and 6½ to 7½ cents for balls, although some distress lots are noted from time to time at concessions.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contracts
Pure benzol	$0.23	
90 per cent benzol	0.23	
Toluol	0.35	
Solvent naphtha	0.35	
Commercial xylol	0.36	
Phenol	0.19 to 0.20	

Per Pound at Producers' Plants

Naphthalene flakes	0.04½ to 0.06½
Naphthalene balls	0.05½ to 0.07½

Per 100 Pounds Delivered

Sulphate of ammonia	$2.25 to $2.35

Ledyard Heckscher Gives His Resignation

Philadelphia, Aug. 30.—Ledyard Heckscher has resigned as president of the Alan Wood Iron & Steel Co., effective Aug. 22. Alan D. Wood, senior vice president has succeeded Mr. Heckscher as presiding officer of the company.

Coke production at by-product plants attached to blast furnace plants increased from 9,346,855 net tons in 1913 to 25,212,745 tons in 1920 to 36,702,890 tons in 1926, according to the federal bureau of mines.

Warehouse

August Sales Vary but Show Slight Gain Over July in Some Cities—Prices Hold Steady with Raise at Baltimore

IRON and steel warehouse sales in August in a number of cities registered an increase over July, both as to total tonnage and number of orders. Detroit continues handicapped by slackened automotive buying. Prices for the week fluctuated but little, the only marked variation being an increase in quotations at Baltimore.

Warehouse business in the New York metropolitan district is being well sustained and many jobbers believe August was a better month than July. While buying has been well distributed over major items, particular interest over the past week has been shown in structurals. Prices, are unchanged. Warehouse business at Buffalo has improved in August, compared with July, much of the gain resulting from larger sales of materials used in building and road construction. Public works of a substantial nature and other prospects for the fall and winter indicate continued brisk demand for such materials. Prices are well maintained.

St. Louis, jobbers report a slight slowing in business, due chiefly to seasonal causes. Prices are holding up well and cutting is considerably less in evidence than a few weeks ago.

Except for continued slack in building materials demand from Cleveland warehouses, buying in August of iron and steel products from jobbers has been slightly better than July. Building materials for repair and improvement work are expected to show improvement in September. Prices on standard products, such as bars, plates and shapes at 3.00c, Cleveland, are firm. Hoops and bands and wire also are steady. The only soft spots are in wire nails, bolts and nuts and concrete reinforcing bars, the last having been subject to keen price competition for some time. Several jobbers are reported quoting 70 and 2 off on bolts and nuts, as compared with the mill basis of 70 and 1. Wire nail prices, although weak, are not as soft as several months ago.

Buying of iron and steel from warehouses in the Chicago district will show a volume for August slightly in excess of July, although below orders taken a year ago. Demand is well diversified. Small shapes out of warehouse are active, and recently a pick-up in the buying of black and galvanized sheets has been noted. Jobbers are holding to their recent prices on bars, shapes and plates.

The demand for warehouse products in the Detroit territory continues somewhat backward. With motor car and allied manufacturers increasing output, however, the outlook is for heavier demand within the next 15 days. Operators are maintaining heavy stocks in anticipation of increased buying. Bars and structurals are in strongest demand, although current requirements are fairly diversified. Prices are steady and unchanged.

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	2.60c to 3.31c
Buffalo	2.75c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.75c
Los Angeles	3.30c
New York	3.24c
Philadelphia	2.60c to 3.20c
Pittsburgh	2.85c to 2.90c
Portland	3.00c
San Francisco	3.10c
Seattle	3.00c
St. Louis	3.15c
St. Paul	2.80c to 3.20c
Tulsa	3.75c to 4.06c

IRON BARS

Baltimore	2.60c to 3.31c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.75c
New York	3.24c
Philadelphia	2.60c to 3.20c
St. Louis	3.15c
Tulsa	3.75c to 4.06c

REINFORCING BARS

Baltimore	2.80c to 3.31c
Boston	3.265 to 3.50c
Buffalo	2.75c
Cincinnati	3.00c
Cleveland	2.20c
Detroit	3.00c
Ft. Worth	3.75c
*Los Angeles	3.05c
**Los Angeles	3.30c
New York	3.00c to 3.10c
Philadelphia	2.75c to 3.20c
Pittsburgh	2.50c to 2.75c
*San Francisco	2.85c
**San Francisco	3.10c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.50c to 2.60c

*Carload. **Less carload.

STRUCTURAL SHAPES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.25c
Los Angeles	3.30c
New York	3.34c
Philadelphia	2.60c to 3.20c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.10c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

PLATES

Baltimore	2.60c to 3.41c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-inch	3.30c
Ft. Worth	4.50c
Los Angeles	3.30c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.60c to 3.20c
Phila., 3/16-in.	2.80c to 3.40c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.10c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.75c to 4.16c

NO. 10 BLUE ANNEALED SHEETS

Baltimore	3.20c to 3.66c
Boston 3/16-inch	3.915c
Buffalo	3.80c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.50c
Ft. Worth	4.70c
Los Angeles	4.10c
New York	3.89c
Portland	4.00c
Philadelphia	3.30c
Pittsburgh	3.30c
San Francisco	3.85c
Seattle	4.00c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.20c to 4.56c

NO. 24 BLACK SHEETS

Baltimore	3.60c to 4.00c
Boston	5.00c
Buffalo	4.30c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.75c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles	5.35c
New York	4.10c to 4.20c
Philadelphia	4.35c
Pittsburgh	3.75c
Portland	4.70c
San Francisco	5.15c
Seattle	4.75c
St. Louis	4.45c
St. Paul	3.95c
Tulsa	4.75c

NO. 24 GALVANIZED SHEETS

Baltimore	4.30c to 4.70c
Boston	5.85c
Buffalo	5.15c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.65c
Detroit	4.90c
Ft. Worth	5.75c
Los Angeles	6.35c
New York	4.85c to 4.95c
Philadelphia	5.20c
Pittsburgh	4.60c
Portland	5.45c
San Francisco	5.95c
Seattle	5.50c
St. Louis	5.25c
St. Paul	4.80c
Tulsa	5.55c

BANDS

Baltimore	3.40c to 4.06c
Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.65c
Ft. Worth	4.40c
Los Angeles	4.15c
New York	3.99c
Philadelphia	3.40c
Pittsburgh	3.60c
Portland	4.00c
San Francisco	3.95c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Baltimore	4.16c
Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cincinnati	4.40c
Cleveland	3.65c
Detroit	4.15c
New York	4.49c
Philadelphia	3.65c
Pittsburgh	4.25c to 4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds, hexagons	Flats, squares
Baltimore	3.25-4.00c	3.75-4.50c
Boston	4.05c	4.55c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500-lb. lots	6.00c
Buffalo	5.85c
Chicago*	6.10c
Cincinnati	7.15c
Cleveland*	5.95c
Detroit*	6.05c
New York	5.75c to 6.25c
Philadelphia	5.50c

*Net base, straightening, cutting, boxing one ton or more.

SWEDISH IRON AND STEEL
New York duty paid

Hollow drill steel	14.00c
Iron bars, rounds	6.25c
Flats and Squares	
Baltimore, New York, Phila.	6.60c

Small Buying on Coast

Structural Demand Leads—Quiet in Oil Fields
Reflected in Steel Buying

SAN FRANCISCO, Aug. 27.—(*By Air Mail*)—Activity in the Coast markets for iron and steel products this week was limited to small business. The structural steel shape market again led in tonnage placed, and, recently, has shown renewed signs of life. The quiet that prevails in the oilfields has affected many lines of business and demand for oil country goods and castings is practically at a standstill. Prices are being well maintained in most lines.

Pig Iron and Coke

The pig iron and coke market is quieter than in many weeks and no important inquiries or sales were noted. Sanitary ware and stove plants appear to be the only ones that are operating on a large scale, jobbing foundries continuing on a limited melting basis with just sufficient orders to keep them going for a day or two at a time. Prices remain unchanged.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	25.00
*Dutch	24.50

*C.i.f. duty paid.

Bars, Plates and Shapes

Included among the larger lots of reinforcing bars placed this week was 314 tons for the Fourth street bridge at Los Angeles. Awards so far this year total 38,751 tons, compared with 28,217 tons for the corresponding period last year. Pending business involves mostly small tonnages, ranging from 20 to 60 tons.

Demand for hoops and bands is considered fair but most sales embrace small lots. The Standard Oil Co. has an inquiry out for 200 tons of hoops. The c.i.f. price continues at 2,75c to 2.85c, the former applying on the more desirable tonnages. Due to the competition of local mills, eastern producers have absorbed the ocean freight rate increase in effect Aug. 1.

Plate demand has shown no improvement and nothing of importance is up for figures this week. The only award of the week called for 100 tons for a tank and tower for San Diego, booked by the Chicago Bridge & Iron Works. To date 50,144 tons have been placed this year, compared with 52,020 tons for the same period in 1926. The price continues firm at 2.40c c.i.f. Coast ports.

Activity in structural shapes is more pronounced this week and awards aggregated 3357 tons, bringing the total for the year to 114,016 tons, compared with 88,503 tons for the corresponding period last year. Included among the larger lots were 2700 tons for the Anthony building, Los Angeles, 325 tons for the Mutual Stores building, Oakland and 182 tons for a bridge at Boise, Idaho. A number of new projects came out for figures this week and included 1200 tons for the Foreman & Clark building, Los Angeles, 1000 tons for an arena in San Francisco and 600 tons for a club at Oakland. Pending business aggregated over 11,000 tons. Prices are firm at 2.40c c.i.f.

Other Finished Material

Municipalities are beginning to display more interest in cast iron pipe and several large inquiries are pending. Awards of the week were not heavy, being less than 400 tons. The largest called for 144 tons for Alhambra, Calif. Awards so far this year total 57,623 tons, compared with 55,214 tons for the same period in 1926. Pasadena will open bids next week on 1304 tons and El Segundo, Calif., will open bids Sept. 16 for 315 tons. Bids on 781 tons for Burlingame were rejected and the city will purchase the pipe in the open market. Pending business is in excess of 4000 tons.

Crane Co. has booked 145 tons of ½ to 2-inch black and galvanized standard pipe for Los Angeles. The Southern Counties Gas Co. placed approximately 500 tons of 4½ and 3½-inch lap welded pipe with the leading interest. The Pacific Gas & Electric Co. has withdrawn its inquiry for 278 tons, 150,000 feet of 2-inch standard pipe with line pipe couplings and has an inquiry out for 15,000 feet of 2-inch standard pipe, plain end and 100,000 feet of 3½-inch O. D. pipe, totaling 400 tons. No action has yet been taken by the Santa Maria Gas Co. on its inquiry for 13,000 feet of 6 or 8-inch line pipe or by the Western Harvester Co. of Stockton on its inquiry for 500 tons of ¼ to 3½-inch standard black pipe.

More Foreign Steel Being Sold in East

New York, Aug. 30.—Sales of imported steel have increased somewhat. On foreign bars for commercial use prices now range from 1.70 to 1.85c, duty paid tidewater, and these prices generally include the extras. On structural shapes prices range from 1.65 to 1.75c, plus European extras. Not much business is being done in foreign concrete reinforcing bars because the higher prices resulting from the increase in the duty some months ago are proving unattractive. On concrete bars the lowest price now would be around 1.80c, base, duty paid.

Business in hoops and bands from abroad is fair. Foreign bands are selling around 2.10c, base, duty paid, plus extras which are substantially one-third of the American extras, making the flat price, depending on specifications, somewhat between 2.15c and 2.25c, duty paid. On foreign hoops the base is around 2.20c, duty paid, which, adding the extras, brings the flat prices to 2.30 to 2.40c, duty paid.

Comparatively little of the steel now being sold is German. Most of it will be shipped from Belgium and France. This is because French and Belgian export prices are not lower than the home prices and hence are not subject to any question in connection with the anti-dumping law in this country.

Bar Mill Wages Higher, with Price Unchanged

Youngstown, O., Aug. 30.—Puddlers in bar iron mills having contracts with the Amalgamated Association of Iron, Steel and Tin Workers will receive $11.55 a ton in September and October, an increase of 42 cents over the rate in July and August. Representatives of the mills and the association met here and determined the average sales price of bar iron in July and August was 1.95c per pound. This is the same average as reported since the beginning of the year. The higher puddling rate for the same sales average is provided by the new contract. Muck mill hands also receive a proportionately higher wage rate under the new scale. Following is a comparison of reported sales price averages:

	1927	1926	1925	1924	1923
Jan. Feb.	1.95c	2.00c	2.00c	2.35c	2.25c
Mar.-Apr.	1.95c	2.05c	2.35c	2.35c	1.50c
May-June	1.95c	2.00c	2.05c	2.25c	2.50c
July-Aug.	1.95c	2.00c	1.95c	2.15c	2.50c
Sept.-Oct.	.....	2.00c	1.95c	2.10c	3.40c
Nov.-Dec.	.....	2.00c	1.95c	2.05c	2.35c
Yearly av.	.....	2.00c	1.99c	2.21c	2.30c

Distributes House Organ By Air Mail

The Beardsley & Piper Co., Chicago, manufacturer of sand conditioning and conveying equipment and sand-slingers, has mailed 4500 copies of its house organ, Better Methods, to the trade by air mail as a tribute to Col. Charles A. Lindbergh. This is believed to be the first time that air mail has been used for distributing the complete issue of a house organ.

Gary's Successor

Chairman of Directors Not Likely To Be Named Soon

New York, Aug. 30.—While no official action has been taken, the feeling among those who decide who is who in the United States Steel Corp., has become somewhat more clarified as to filling the vacancy resulting from the death of Elbert H. Gary, who served as chairman of the board of directors and chairman of the finance committee.

No action regarding a successor was taken at the monthly meeting of the corporation's directors today. President James A. Farrell presided. A resolution was adopted in commemoration of Judge Gary.

The present outlook is that the finance committee will elect a chairman. J. P. Morgan, head of the dominant banking interest associated with the Steel corporation, is abroad and will not return until November. Whether any action will be taken before his return is not certain. It further is not considered assured that Mr. Morgan would want the chairmanship of the finance committee.

It appears unlikely that anybody will be elected in the near future to succeed Judge Gary as chairman of the board of directors.

In electing a chairman of the finance committee there will be borne in mind the fact that this important committee holds the purse strings of the corporation, and that it is only logical that the president, who recommends projects for approval and who executes these projects, should not preside over the committee which passes upon the recommendations. But the election of a chairman of the finance committee is not expected to result in any reduction of the status of Mr. Farrell as the present chief executive officer.

It is learned that there is to be absolutely no change in the Steel corporation's general policy.

Opinion is gaining ground here that Willis L. King, now a vice president of the American Iron and Steel institute will be elected president of the institute to fill the unexpired term of Judge Gary. It is expected that the directors of the institute will take action on this matter at their next meeting, although no date has been set for the meeting. If Mr. King is elected, it will mean that he will hold the office until next May, when a successor to Judge Gary will be elected.

The bureau of railway economics claims that passenger traffic costs are excessive, absorbing 28 per cent of total operating expenses last year but providing only 20 per cent of all revenue. Receipts from mail and express services are included.

Plan Memorial for Gary

Chicago, Aug. 30.—At the request of a committee of the Gary, Ind. chamber of commerce, Lorado Taft, sculptor, will visit Gary soon to inspect a place and study a design for a statue or other fitting memorial in honor of the late Judge Elbert H. Gary. He will make a study of the Gary gateway park with a view to locating the proposed memorial there. Having enjoyed a personal acquaintance with Judge Gary, the sculptor is enthusiastic about the proposed work.

Sheet and Tin Mill Wage Rates Unchanged

Youngstown, O., Aug. 30.—Amalgamated sheet and tin plate mill wage rates for September and October continue unchanged from the July and August levels. The average of sales prices of sheets on which the wages are based was the same in July and August as in the two months preceding. The current scale is 25½ per cent above base. Following is a comparison of reported price averages:

July-Aug.	3.00c	unchanged
May-June	3.00c	unchanged
March-April, 1927	3.00c	—3 per cent
Jan.-Feb.	3.10c	—4½ per cent
Nov.-Dec.	3.25c	unchanged
Sept.-Oct.	3.25c	unchanged
July-Aug.	3.25c	unchanged
May-June	3.25c	unchanged
March-April	3.25c	+1½ per cent
Jan.-Feb., 1926	3.20c	+3 per cent
Nov.-Dec.	3.10c	unchanged
Sept.-Oct.	3.10c	—4½ per cent
July-Aug.	3.25c	—4½ per cent
May-June	3.40c	unchanged
March-April	3.40c	—1½ per cent
Jan.-Feb., 1925	3.45c	—1½ per cent

Few Mishaps in July at Worcester Plants

Report of the Worcester, Mass. Safety council for July reveals that less than one accident per 500 employes was the record at the mills of the American Steel & Wire Co. and the Palmer works of the Wickwire-Spencer Steel Co. No accidents were reported by the Norton Co.; machine and wheel division, American Steel & Wire Co., Central works; Morgan Construction Co., Wickwire-Spencer Morgan and Spencer works; Baldwin Chain & Mfg. Co.; Curtis & Marble Machine Co.; Stevens, Walden & Worcester; Worcester Stamped Metal Co.; M. S. Wright Co.; Rockwood Sprinkler Co.; Eastern Bridge & Structural Co.; Worcester Wire Works; Wright Machine Co.; Culver-Stearns Mfg. Co. and Arcade Malleable Iron Co.

Pig Iron Shipments Gain

(*Concluded from Page* 521)

waukee district and numerous tonnages of foundry and malleable, from 50 to 200-ton lots. The market is holding at $19.50, Chicago furnace, for No. 2 foundry and malleable in the Chicago district. At Michigan points and West of Chicago, prices are made in a few instances to meet competition.

Cincinnati, Aug. 30.—Pig iron inquiries are more numerous but mainly for small lots. Two inquiries, one for 250 tons and another for 500 tons for Indiana manufacturers, were in the Monday mails. One interest reports sales for the past five days of 850 tons of foundry iron. Another reports selling 1500 tons, and another 1000 tons, including two cars of silvery and some high silicon iron. The Standard Sanitary Mfg. Co. is reported to have placed 2000 to 5000 tons of 1.75 to 2.25 per cent and 2.25 to 2.75 per cent silicon iron, divided between southern and lake furnaces for its Louisville plant.

St. Louis, Aug. 30.—Pig iron demand has quieted down. Sales during the week totaled 2400 tons, all foundry iron, and divided between northern and southern producers. Considerable business is pending, according to sellers. Prices are firm.

Birmingham, Ala., Aug. 30.—Pig iron buying continues in hand-to-mouth manner, and aggregate business is under output. Sloss-Sheffield Steel & Iron Co. has blown out its Sheffield furnace. Nineteen furnaces are in blast in Alabama, 11 on foundry, six on basic, one on ferromanganese and one special.

Philadelphia, Aug. 30.—The Baldwin Locomotive Works is inquiring for 2500 tons of foundry iron for Eddystone. The National Radiator Co. continues to negotiate for its requirements for Trenton, N. J., which are expected to aggregate about 6000 tons. Considerable low phosphorus iron was placed in the past week, aggregating 10,000 to 12,000 tons and comprising requirements of several consumers. One eastern Pennsylvania maker now is quoting foundry iron at $20, base, furnace, and is refusing to equalize freight rates. In Virginia 6000 tons of pipe iron was bought in the past week at unchanged prices.

Bethlehem Steel Co. has blown out a blast furnace at its Maryland plant for relining. This leaves four furnaces in blast there.

The Alan Wood Iron & Steel Co. will blow in its No. 2 furnace Sept. 10. The furnace has daily capacity for 450 tons of pig iron.

The city of Katowice, Poland, beginning in 1928, will organize an International Fair along the lines of the Lemberg and Posen fairs, to be of particular importance as representing the chief industrial districts of Poland.

Iron Production Loss Is Small

August Total Is 2,929,020 Gross Tons, Against 2,954,625 Tons in July—Daily Rate Shrinks Only 827 Tons—Indications Point to Improvement in September

PRODUCTION of coke pig iron in the United States in August, according to an estimate compiled by IRON TRADE REVIEW from reports telegraphed by blast furnaces, again showed a loss. This was the fourth consecutive month to show recession, however, there is good reason to believe that the low point for 1927 has been passed and that the output for September will show increase. Not only were the losses in total production and average daily rate the smallest of any of the four months, but fewer stacks went out of blast. Already several furnace operators have announced intentions to blow in furnaces early in September.

MONTHLY PRODUCTION

	1927	1926	1925
January	3,101,346	3,319,789	3,372,207
February	2,940,604	2,923,850	3,214,067
March	3,482,107	3,458,171	3,571,422
April	3,424,377	3,438,805	3,211,235
May	3,391,067	3,477,820	2,933,907
June	3,089,726	3,232,478	2,679,045
July	2,954,625	3,224,663	2,665,262
August	2,929,020	3,200,723	2,707,171
Total 8 mos...	25,312,872	26,276,299	24,354,316
September		3,163,269	2,725,885
October		3,334,206	3,017,889
November		3,237,992	3,023,257
December		3,089,175	3,249,057
Grand total		39,100,941	36,370,404

Total pig iron made in August was 2,929,020 gross tons, or 25,605 tons less than the 2,954,625-ton output of the preceding month. Both August and July were months of 31 days. Average daily production was 94,484 tons, which compared with the 95,311-ton per day rate of July, was a loss of 827 tons. The drop in both total output and daily rate amounted to 0.8 per cent.

Compared with August, 1926, production was 8.5 per cent less, but against August, 1925, it was an improvement of 8.2 per cent. Production for the first eight months of 1927 totals 25,312,872 tons, against 26,276,299 tons for the same period of 1926.

On the last day of the month, 188 of the country's 362 serviceable blast furnaces were in operation. This represented an activity of 51.9 per cent. On July 31, active stacks totaled 190, or 52.5 per cent. Of the merchant class, 1 stack was blown in and 2 blown out; of the nonmerchant or steelworks class, 4 were blown in and 5 blown out.

Stacks blown in during August were: In Pennsylvania: Steelton E, Bethlehem Steel Co.; Keystone, Reading Iron Co.; one Aliquippa, Jones & Laughlin Steel Corp. In Alabama: Bessemer No. 4, Tennessee Coal, Iron & Railroad Co. In Colorado: One Minnequa, Colorado Fuel & Iron Co.

Stacks blown out during the month were: In Ohio: Mingo No. 3, Carnegie Steel Co. In Pennsylvania: Steelton B, Bethlehem Steel Co.; Isabella No. 1, Carnegie Steel Co. In New York: One Port Henry, Witherbee-Sherman Co. In Alabama, Sheffield, Sloss-Sheffield Steel & Iron Co. In Colorado: One Minnequa, Colorado Fuel & Iron Co. In Illinois: Gary No. 6, Illinois Steel Co.

Active Blast Furnaces

	In blast	Total	Per Cent
August	188	362	51.9
July	190	362	52.5
June	198	362	54.7
May	211	363	58.1
April	221	364	60.7
March	223	365	61.1

Improvement in Baltimore Warehouses Marked

Baltimore, Aug. 30.—A decided improvement in morale has developed in the iron and steel jobbing trade here. Some months ago there developed a price war between certain jobbers which precipitated an uncertain and chaotic general situation. The low prices which were quoted created distrust among buyers in the territory. The latter felt that if the warehouses could do business at the prices then being named, there was something radically wrong with the jobbing trade.

At the present time prices are not averaging any higher than during the period of demoralization, but they have settled at a level. The situation has become clarified to the extent that jobbers know about what prices to charge and consumers know approximately what they should pay. Business is being figured with closeness and jobbers are operating on a narrow margin. Some jobbers, however, actually declare that they are doing business at a fair profit.

It is thought here that not a great deal of permanent business has been built up by any of the local jobbers on a purely price basis. Price cutting first started in connection with a struggle for the business of certain important consumers. Jobbers who then were faced with the loss of good customers, met the concessions that were offered from other sources. From the large buyers, the cuts spread until the entire market was undermined. In commenting on the results of the price cutting, some jobbers here feel that the price cutters would have been just as successful in obtaining business had they abstained from price cutting and, instead, relied on the building up of confidence based on service and fair dealing. These jobbers feel that the only permanent effect of the price cutting has been to cut down radically the margin of profit.

Another reason for the present improved sentiment among jobbers here is that their business has taken an upward trend during the past ten days. August bookings are averaging, somewhat heavier than those of July.

AUGUST PIG IRON

	No. of stacks	Number in blast last day of month Aug.	July	—Totals— Aug.	July
Ohio	70	39	40	698,297	719,659
Pennsylvania	122	60	59	895,878	871,068
Alabama	34	20	20	202,201	196,428
Virginia	15	1	1	7,420	7,171
New York	26	15	16	215,616	211,930
New Jersey	3	0	0	.....	.....
Illinois	26	16	16	297,047	300,547
Colorado	5	3	3		
Indiana	18	12	13	390,467	411,184
Maryland	6	5	5		
Wisconsin	5	1	1		
Kentucky	5	2	2		
Massachusetts	1	1	1		
Tennessee	11	3	3	106,977	109,505
Utah	1	1	1		
W. Virginia	5	3	3		
Michigan	4	4	4		
Minnesota	3	2	2	77,751	79,390
Missouri	1	0	0		
Texas	1	0	0		
Spiegel and ferro—all states	....	....	....	37,366	47,743
	362	188	190	2,929,020	2,954,625

AVERAGE DAILY PRODUCTION

	1927	1926	1925	1924	1923
Jan.	100,043	107,039	108,781	97,273	104,136
Feb.	105 021	104,423	114,788	105,987	106,925
Mar.	112,326	111,554	115,207	111,787	113,664
Apr.	114,146	114,627	107,041	107,537	118,210
May	109,388	112,187	94,642	84,515,	124,790
June	102 991	107 749	89 301	67 427	122,262
July	95,311	104,021	85,976	57,531	118,860
Aug.	94,484	103,249	87,328	60,741	111,254
Sept.	.....	105 442	90 862	68,454	103,917
Oct.	.....	107,555	97,351	79,419	101,375
Nov.	.....	107,933	100,775	83,832	96,373
Dec.	.....	99,651	104,808	95,367	93,952
Ave.	104,168	107,126	99,645	84,908	109,659

Exports Rise; Imports Drop

July Shipments Are 6138 Tons Ahead of June—Receipts Totaling 61,112 Tons Show a Decrease for Second Consecutive Month—Russia, Panama and Cuba Prove Good Markets for Iron and Steel

EXPORTS of iron and steel, aided by increased shipments to Russia, Cuba and Panama, rose to 190,502 tons in July, 6138 tons higher than the June total, according to figures compiled by the iron and steel division of the department of commerce. The July figure, however, is shaded by the July, 1926, total of 194,717 tons. Imports of iron and steel in July were off for the second consecutive month, the total dropping to 61,112 tons, compared with 69,017 tons in June, and 82,411 tons in July, 1926. The total import tonnage from January through July is nearly 200,000 tons less than for the corresponding time last year. India, which last month shipped 5667 tons to the United States, sent nothing in July. Belgian and Czechoslovakian shipments decreased in July, as did those of the United Kingdom and Canada.

IMPORTS AND EXPORTS

Gross Tons

	—1927—		—1926—	
	Imports	Exports	Imports	Exports
Jan.	63,404	215,235	79,067	174,585
Feb.	49,451	166,128	100,213	157,187
March	61,872	171,094	93,107	169,438
April	60,374	192,339	107,636	194,449
May	79,814	202,708	108,781	173,418
June	69,017	184,364	124,215	159,506
July	61,112	190,502	82,411	194,717
Aug.			91,578	171,588
Sept.			85,484	182,071
Oct.			81,830	172,070
Nov.			81,259	219,830
Dec.			75,559	198,189
Total	445,044	1,322,370	1,111,090	2,167,048

Iron ore imports increased to 252,162 tons from the June total of 231,815 tons, and a slight increase was noted in ferromanganese imports, but pig iron, manganese, cast iron pipe, steel pipe and steel scrap dropped. Ingots, blooms etc., rose slightly in July. Although not shipping as much iron ore as in June, Chile in July bolstered up the total in that classification with 104,400 tons. Sweden also aided in raising the iron ore total, sending in July 30,000 tons more than in June.

South America, Far East and Africa increased their receipts in July, while North and Central America and Europe dropped somewhat. A 6000-ton increase in the South American total was the highest recorded in July, although North and Central America, receiving 94,589 tons, had the highest total. All of the export markets in the January through July compilation for 1927 are ahead of the corresponding period of 1926.

At the end of the first seven months of 1927 the Far East had received 324,037 tons of iron and steel products, compared with 290,089 tons in the like time in 1926. Europe increased to 114,724 tons for that period of 1927 compared with 79,895 tons in the Jan-

ORIGIN OF PIG IRON IMPORTS

Gross Tons

From:	July	June
France	500	.....
Germany	.....	750
Netherlands	1,025	1,840
Sweden	405	226
United Kingdom	3,042	4,995
Canada	.....	19
British India	5,405	5,667
Total	10,377	13,497

ORIGIN OF IRON ORE IMPORTS

Gross Tons

From:	July	June
Sweden	57,125	22,776
Brazil	495	1,353
United Kingdom	8	.....
Canada	3,581	970
Newfoundland	14,927	.....
Cuba	27,613	22,000
Chile	104,400	132,900
Algeria and Tunis	44,013	44,241
Germany	.....	225
British West Africa	.....	1,350
Egypt	.....	6,000
Total	252,162	231,815

ORIGIN OF MANGANESE IMPORTS

(Concentrates)

Gross Tons

From:	July	June
Soviet Russia in Europe	15,680	15,641
United Kingdom	13	.....
Canada	34	17
Brazil	6,486	11,857
British India	3,370	3,632
British West Africa	2,365	5,417
Java and Madura	.....	287
Total	27,948	36,851

ORIGIN OF FERROMANGANESE IMPORTS

Gross Tons

From:	July	June
France	74	23
Italy	1	.....
United Kingdom	1,171	599
Canada	1,478	1,014
Total	2,724	1,636

ORIGIN OF IMPORTS

Gross Tons

From:	Cast iron pipe	Steel bars	Steel scrap	Ingots, blooms, etc.
United Kingdom	94	94	.....	5
France	7	1,419	.....	413
Netherlands	2	29	.....	.....
Canada	78	.....	3,232	.....
Cuba	119	.....	.....	.....
Colombia	111	.....	.....	.....
Belgium	.....	2,984	.....	469
Germany	.....	578	.....	.....
Sweden	.....	523	28	208
Other countries	264	2,070	.....	16
Total	675	5,697	3,260	1,111

IMPORTS OF IRON AND STEEL

Gross Tons

Products	July 1927	June 1927	January through July 1927	January through July 1926
Pig iron	10,377	13,497	71,196	349,462
Ferromanganese and alloys[1]	2,724	1,636	15,152	23,809
Ferrosilicon[2]	193	263	5,856	6,374
Ferrochrome[3]	....	....	382	341
Scrap	3,260	5,992	37,182	35,970
Iron slabs	....	....	....	42
Steel ingots, billets, etc.	1,111	1,037	7,657	20,,956
Steel bars	5,697	9,209	56,521	62,589
Iron bars	425	264	2,807	3,385
Wire rods	891	597	7,490	5,399
Hoops, bands and scrolls	5,447	2,433	20,139	12,193
Boiler and other plate	188	285	2,728	3,566
Sheets, skelp, and saw plate	1,645	1,395	9,164	3,784
Tin plate	31	42	923	2,007
Structural shapes	12,606	12,563	87,942	58,434
Rails and splice bars	600	3,238	10,714	36,340
Cast iron pipe	7,381	6,886	54,931	39,959
Other pipe and tubes	6,693	7,583	39,137	15,779
Barbed wire	125	284	2,971	2,171
Round iron and steel wire	372	426	2,723	2,389
Steel telegraph and telephone wire	1	3	31	121
Flat wire and strip steel	185	215	1,606	2,113
Wire rope and strand	157	259	1,520	1,575
Other wire	36	26	291	1,221
Nails, tacks	832	703	4,006	2,366
Bolts, nuts, rivets, washers	47	40	184	262
Castings and forgings	88	141	1,791	1,584
Total	61,112	69,017	445,044	694,191

[1]Manganese content.
[2]Silicon content.
[3]Chromium content.

IMPORTS BY COUNTRIES OF ORIGIN

Gross Tons

	July 1927	January through July 1927	January through July 1926
Austria	146	662	377
Belgium	15,443	125,235	105,409
Czechoslovakia	4	2,843	668
France	12,357	76,322	74,528
Germany	12,471	84,366	128,809
Italy	1	293	266
Netherlands	1,232	18,225	59,456
Norway	1	5,756	8,911
Poland and Danzig	449	1,745	259
Spain	6	30	1
Sweden	1,840	13,051	14,311
Switzerland	1	24	7
Turkey in Europe	1	1	.....
United Kingdom	6,383	38,722	97,308
Canada	5,371	43,675	33,814
British India	5,405	20,719	.....
Japan	1	17	13
Denmark	.....	89	33
Guatemala	.....	32	.....
Mexico	.....	207	7,929
Virgin Islands	.....	31	3
Brazil	.....	7	.....
India	.....	8,003	66,708
Hongkong	.....	6	.....
Australia	.....	1	.....
Esthonia	.....	54	.....
Honduras	.....	4	1
Cuba	.....	2,189	3,599
Dominican Republic	.....	21	62
Panama	.....	19	7,748
French West Indies	.....	120	1
Finland	.....	.....	799
Lithuania	.....	.....	1,530
Other British W. Indies	.....	.....	403
Chile	.....	.....	3
Java and Madura	.....	.....	1
Algeria and Tunis	.....	.....	7
Totals	61,112	442,469	612,969

uary through July period in 1926.

Imports are considerably lower in 1927 than in 1926. United Kingdom, which at the end of July, 1926, had shipped 97,308 tons of iron and steel to the United States, has, for the corresponding time this year, sent over only 38,722 tons. Likewise, Germany has exported 84,366 tons so far in 1927, compared with 128,809 tons shipped through July in 1926. India, sending nothing in July, is still more than 55,000 tons behind its aggregate shipments of the January through July period of 1926.

EXPORTS OF IRON AND STEEL

Gross Tons

Products	July 1927	June 1927	January through July 1927	January through July 1926
Pig iron, not including ferro-alloys	4,182	4,863	26,721	11,711
Ferromanganese and spiegeleisen	98	75	391	344
Scrap	17,499	26,086	121,552	71,316
Ingots, blooms, skelp, etc.	10,616	12,096	49,951	42,956
Iron bars	597	487	3,113	2,559
Steel bars	9,340	6,874	65,916	80,024
Alloy steel bars	423	732	3,452	3,291
Wire rods	679	1,625	9,291	10,416
Plates	11,209	10,126	81,561	79,095
Galvanized sheets	15,095	14,108	101,047	103,221
Black steel sheets	16,173	12,136	106,374	108,554
Black iron sheets	1,248	1,654	10,141	11,952
Hoops, bands and strip steel	3,176	4,567	28,547	30,046
Tin plate, terne plate, etc.	19,845	18,543	172,611	118,539
Structural shapes, plain	13,144	11,744	79,259	88,397
Structurals fabricated	3,263	6,824	36,682	50,711
Metal lath	496	455	2,729	2,906
Steel rails	13,137	11,320	111,141	91,229
Rail fastenings, switches, etc.	3,956	3,178	22,020	24,416
Boiler tubes and welded pipe	23,917	19,732	166,603	152,946
Malleable iron screwed pipe fittings	862	680	6,025	7,377
Cast iron screwed pipe fittings	675	406	3,952	5,841
Cast iron pressure pipe and fittings	1,165	1,284	7,121	7,494
Cast iron soil pipe and fittings	1,144	625	5,031	7,536
Plain wire	3,637	2,740	19,543	21,862
Barbed wire, woven wire fencing	5,385	5,004	28,634	35,547
Wire cloth and screening	240	171	1,370	1,210
Wire rope	317	432	2,748	2,902
Insulated wire and cable	39	18	275	424
Other wire	1,252	676	5,984	5,116
Wire nails	1,193	581	4,765	7,428
Nails other than wire	694	702	4,252	4,587
Tacks	125	42	566	566
Horseshoes	38	45	285	347
Bolts, nuts, rivets, except tacks	1,206	969	6,959	8,321
Car wheels and axles	1,422	947	11,027	9,910
Iron castings	930	568	6,729	5,342
Steel castings	545	911	4,733	5,222
Forgings	540	338	3,269	1,723
Total	190,502	184,364	1,322,370	1,223,374

DESTINATION OF EXPORTS

Gross Tons

Country of Destination	July, 1927	January through July, 1927	January through July, 1926
North and Central America and West Indies	94,589	653,126	645,622
Canada and Newfoundland	67,994	500,931	483,980
Cuba	10,305	51,999	52,065
Mexico	7,919	52,521	60,066
Guatemala	390	4,750	7,969
Salvador	253	2,924	11,480
Panama	3,056	12,551	4,887
Other British West Indies	944	8,642	5,410
Other West Indies	2,693	11,168	9,729
Other Central America	1,035	7,640	10,036
South America	32,406	218,372	198,226
Argentina	8,660	51,289	34,955
Brazil	5,307	46,594	24,450
Chile	4,540	19,879	36,802
Colombia	5,955	37,323	36,994
Peru	4,937	22,239	19,835
Venezuela	2,418	32,225	38,475
Other South America	589	8,823	6,715
Europe	24,046	114,724	79,895
France	230	3,361	7,055
Italy	11,350	37,142	22,187
Rumania	88	1,307	2,057
Russia	2,067	4,196	2,807
Turkey	27	2,099	2,232
United Kingdom	6,339	43,181	32,051
Other Europe	3,945	23,438	11,506
Far East	37,824	324,037	290,089
Australia	1,058	16,557	13,827
British Malaya	825	6,487	5,133
China	2,947	35,751	21,567
Dutch East Indies	3,573	23,701	19,869
India	1,122	15,820	19,938
Japan and Chosen	19,101	167,504	156,345
Kwangtung	434	15,297	7,599
Philippine Islands	7,899	33,958	39,055
Other Asia and Far Eastern markets	865	8,962	6,756
Africa	1,637	12,111	9,542
British South Africa	665	5,258	4,796
Egypt	622	2,859	3,237
Portuguese East Africa	90	3,189	1,261
Other Africa	260	805	248

DESTINATION OF IRON AND STEEL EXPORTS

Gross Tons

	Rails	Galvanized sheets	Plates not fabricated	Tin, terne plate	Steel sheets, black	Barbed wire	Steel bars	Steel scrap
Argentina		644	23	2,375	170	999		
Australia		109	27		48	1	143	
Belgium					536			
Brazil	1,834	451	287	605		596	101	
British India		78						
British Malaya				355				
British South Africa		1		103		186		
Canada	1,160	3,255	8,591	3,780	5,293	210	4,865	5,003
Central America	67	360	18		19	268	87	
Chile	512	596	36	1,010	244		401	
China		238		1,981			12	256
Colombia	563	771	8	203		249	194	14
Cuba	2,454	1,305	157	400		599	263	
Dutch East Indies		1,018						
Dutch West Indies				59				
Egypt				591				
Europe							72	
Germany								58
Hongkong			103					91
Italy				768				10,404
Japan including Chosen	337	1,703		3,524	9,262		32	1,329
Java and Madura				359				
Mexico	261	976	96	1,055	135	581	50	250
Norway		62		449				
Other Europe		243						
Panama	1,587							
Peru	2,499		4	447	9		512	
Philippine Islands	106		698	832	98	861	17	
United Kingdom					47		2,322	99
Uruguay				83				
Venezuela	25			54				
Total	13,137	15,095	10,198	19,845	16,173	4,998	9,340	17,499

Exports of Metalworking Machinery

	July 1927	July 1926	January through July 1927	January through July 1926
Engine lathes	60	12	354	147
Turret lathes	69	11	164	78
Other lathes	32	71	245	421
Vertical boring mills and chucking machines	6	3	71	53
Thread-cutting and automatic screw machines	93	114	493	518
Knee and column type milling machines	27	35	136	127
Other milling machines	44	24	235	259
Disk type gear-cutting machines	20	1	27	5
Other gear-cutting machines	42	18	212	112
Vertical drilling machines	20	17	152	209
Radial drilling machines	8	2	49	45
Sensitive drilling machines	20	28	307	677
Other drilling machines	47	62	626	783
Metal-sawing and cutting-off machines	19	24	160	134
Shapers and slotters	18	16	205	409
Planers	6	2	27	13
External cylindrical grinding machines	48	46	388	340
Internal grinding machines	44	8	251	131
Metalworking tool-sharpening machines	52	25	449	531
Other metal-grinding machines, pounds	147,090	49,628	688,380	448,086
Sheet metalworking machines, pounds	609,239	546,797	2,456,878	2,549,652
Plate metalworking machines, pounds	52,655	78,150	488,367	164,072
Rod or wireworking machines, pounds	4,195	37,640	189,016	308,006
Forging machinery, pounds	276,216	800,111	2,261,314	3,814,782
Rolling-mill machinery, pounds	511,237	64,889	4,882,644	2,595,298
Foundry and molding equipment, pounds	419,185	1,080,551	3,642,634	3,515,706
Other power-driven metalworking machinery and parts, pounds	657,160	749,043	3,748,141	4,626,689
Hand or foot operated metalworking machinery and parts, pounds	8,216	37,038	166,410	146,622
Pneumatic portable tools	2,198	1,269	11,584	11,035
Other portable metalworking machines, pounds	32,843	26,982	217,660	168,922
Chucks for machine tools	1,122	583	9,841	14,558
Reamers, cutters, drill, taps, dies and other metalworking tools, pounds		198,413		1,316,917

News of Societies

A NUMBER of associations and committees of national organizations are planning meetings to be held in Detroit during the week of the National Steel and Machine Tool Exposition, Sept. 19-23. In calling their meetings during National Metal Week, they are combining the advantages of attending the technical sessions of the American Society for Steel Treating, American Welding society, Institute of Metals and Society of Automotive Engineers with the opportunity to inspect the exposition.

Among the associations arranging meetings concurrently are the Drop Forge Supply association, machine shop practice section of the American Society of Mechanical Engineers and Central States Gas association. Those attending the latter meeting will be able to visit the exhibit of the American Gas association which will occupy 10,000 square feet in Convention Hall.

* * *

Machine Tool Congress Proposed

For some time, it has been felt that there is a field for an organization open to all men interested in discussions of problems of mutual concern to users, distributors, designers and builders of machine tools. Many of these men are not members of engineering societies and are unable to attend meetings of these organizations. Consequently a Machine Tool Congress now is being organized and will hold its first meeting at Cleveland, Sept. 19-22, concurrent with the First National Machine Tool Builders' exposition.

It is proposed that the first deliberate meetings be held in conjunction with the production meeting of the Society of Automotive Engineers at Hotel Winton, Sept. 19 and 20. Further sessions will be conducted on Sept. 21 and 22 at Hotel Cleveland. Subjects to be discussed and the authorities who will discuss them are as follows: "Various Phases of Standardization of Machine Tools," by Dr. P. G. Agnew, secretary, American Engineering Standards committee, New York; "Standardization from the Machine Tool Builder's Point-of-View," by James E. Gleason, president, Gleason Works, Rochester, N. Y.; "Standardization from the Engineering Point-of-View," by Sol A. Einstein, chief engineer, Cincinnati Milling Machine Co., Cincinnati; and "Standardization from the User's Point-of-View."

Reduced rates on the certificate plan of one and one-half fare for the round trip have been granted by the railroads to those who take membership in the congress. Secretary protem of the congress is E. F. DuBrul, general manager of the National Machine Tool Buildlers association, Provident Bank building, Cincinnati.

* * *

Will Attend Two Expositions

To enable its members to attend both the National Machine Tool Builders' exposition in Cleveland and the National Steel and Machine Tool exposition in Detroit during the week of Sept. 19, the Society of Automotive Engineers will hold its production meetings at Hotel Winton in Cleveland on Sept. 19 and 20 and at Hotel Statler in Detroit, on Sept. 21 and 22. The party will go to Detroit by boat on Tuesday evening after attending a stag carnival at Hotel Winton in the early part of the evening.

The program for the technical sessions has been announced as follows:

Monday, Sept. 19

MORNING

"Net Profit from Modern Machine Tools," by George T. Trundle Jr., president, George T. Trundle Engineering Co., Cleveland.

"Manufacturing Methods Used in Building the Wright Whirlwind Engine," by Lee M. Beatty, production engineer, Wright Aeronautical Co., Paterson, N. J.

EVENING

"Nonproductive Materials," by D. W. Oviatt, efficiency engineer, Buick Motor Co., Flint, Mich.

"Integrated Production," by E. P. Blanchard, sales promotion manager, Bullard Machine Tool Co., Bridgeport, Conn.

Tuesday, Sept. 20

MORNING

Machine Tool Session

"Application of Electric Motors to Machine Tools," by R. C. Deale, Niles-Bement-Pond Co., New York.

"Developments in Cylinder Grinding," by M. C. Hutto, Hutto Engineering Co., Detroit.

"External Grinding," by L. A. Becker, A. P. Schraner, Cleveland.

Wednesday, Sept. 21

AFTERNOON

Iron and Steel Session

"Relation of Metallurgy to Production," by J. M. Watson, Timken Roller Bearing Co., Detroit.

"Frequency Curves as a New Basis for S.A.E. Physical Property Charts," by E. J. Janitzky, metallurgical engineer, Illinois Steel Co., Chicago.

EVENING

"Production Engineering," by A. R. Glancy, president, Oakland Motor Car Co., Pontiac, Mich.

"Fire Hazards Incidental to the Spraying of Inflammable Finishes," by H. E. Miner, Du Pont de Nemours & Co., Wilmington, Del.

Thursday, Sept. 22

EVENING

Time-Study Session

"Relation of Time-Study to Management," by J. C. Mottashed, superintendent of time study, Hudson Motor Co., Detroit.

"Relation of Time-Study to Labor Budgets," by E. J. Frounfelker, manufacturing division, Continental Motors, Detroit.

Convention Calendar

Sept. 4-21—American Electrochemical society. Northwestern trip leaving and returning to Chicago. Colin G. Fink, Columbia university, New York, is secretary.

Sept. 6-9—New Haven Machine Tool exhibition. Annual exhibit at Mason laboratory, Yale university, New Haven, Conn. H. R. Westcott, 400 Temple street, New Haven, Conn., is chairman.

Sept. 12-17—International Congress for Testing Materials. Meeting at Amsterdam, Holland. Headquarters at Valckenierstraat 2, Amsterdam, Holland.

Sept. 15—American Refractories institute. Fall meeting at Clifton hotel, Niagara Falls, Canada. D. A. Texter, 2202 Oliver building, Pittsburgh, is secretary.

Sept. 19-21—Concrete Reinforcing Steel Institute. Semiannual meeting at Aviation Country club, Detroit. M. A. Beeman, Tribune Tower, Chicago, is secretary.

Sept. 19-22—Society of Automotive Engineers. Production meeting at Hotel Winton, Cleveland, Sept 19-20 and Hotel Statler, Detroit, Sept. 21-22. Coker F. Clarkson, 29 West Thirty-ninth street, New York, is secretary.

Sept. 19-22—American Welding society. Fall meeting at Book-Cadillac hotel, Detroit. M. M. Kelly, 33 West Thirty-ninth street, New York, is secretary.

Sept. 19-22—Institute of Metals. Meeting at Book-Cadillac hotel, Detroit. H. Foster Bain, 29 West Thirty-ninth street, New York, is secretary.

Sept. 19-23—Associated Machine Tool Dealers. Meeting at Hotel Hollenden, Cleveland. T. W. Carlisle, 1392 West Third street, Cleveland, is secretary.

Sept. 19-23—American Society for Steel Treating. Ninth annual convention at Hotel Statler, Detroit. National steel and machine tool exposition at Convention Hall. W. H. Eisenman, 4600 Prospect avenue, Cleveland, is secretary.

Sept. 19-23—National Machine Tool Builders' association. Exposition of machine tools at Public Hall, Cleveland. E. F. DuBrul, 630 Vine street, Cincinnati, is general manager. Roberts Everett, Room 620, 225 West Thirty-fourth street, New York, is exposition manager.

Sept. 20-22—National Association Ornamental Iron and Bronze Manufacturers. Annual convention at West Baden Springs hotel, West Baden, Ind. A. L. Graham, 195 Platt street, Rochester, N. Y., is publicity secretary.

Sept. 20-23—Iron and Steel institute. Autumn meeting at Royal Technical college, Glasgow, Scotland. G. C. Lloyd, 28, Victoria street, London, S. W. 1, is secretary.

Sept. 26-30—National Safety council. Annual congress at Hotel Stevens, Chicago. W. H. Cameron, 108 East Ohio street, Chicago, is managing director.

Oct. 10-13—American Society of Mechanical Engineers. First national fuels meeting at St. Louis under auspices of fuels division. Calvin W. Rice, 29 West Thirty-ninth street, is secretary.

Oct. 17-20—National Hardware Association of the United States. Thirty-third annual convention at Marlborough-Blenheim, Atlantic City, N. J. George A. Fernley 505 Arch street, Philadelphia, is secretary.

The funded debt of American steam railroads was $11,305,076,143 in 1926, and $10,963,213,750 in 1924.

Industrial Men in the Day's News

Henry A. Roemer, President Newly Formed Continental Steel Corp.

NO TASK is too large or small for him whose industrial experience includes numerous positions from heater to corporation president.

ALWAYS progressive, yet sympathetic to the humanitarian aspects of business, he has built up an esprit de corps in his organization rarely found in a large company.

A MAN of great friendship for youth and of high principles, his activity in Canton community work has won for him uniform admiration and respect.

NO CHANCE for new men in the steel industry. All the opportunities have been gobbled up." That was what older men told young Henry A. Roemer when he left school at 14 to work in a rolling mill. Today, as president of the Continental Steel Corp., formed through the merger of Superior Steel Co., Canton, O., Chapman-Price Steel Co., Indianapolis, and Kokomo Steel & Wire Co., Kokomo, Ind., and one of the best known of steel plant executives, he has shown that those who offered him so little encouragement were mistaken. Furthermore, he declares emphatically that he believes those who make similar statements today also are mistaken.

Mr. Roemer has an unshakable belief in the steel industry and in youth. What he knows about the former one may judge from the fact that he worked his way up through the mills of the Youngstown Sheet & Tube Co. as heater, doubler, catcher and roller, served with the hot mill crew, and when barely 21 was night superintendent at the Campbell, O., works. He started to work at the age of 14 years at the Anna blast furnace at Struthers, O. He then joined a sheet mill a year later and has been identified with that branch of the industry since. Today in addition to heading the Continental corporation, he is a member of the advisory board of the National Association of Sheet and Tin Plate Manufacturers, at Pittsburgh.

What does he know of youth? To know him personally is to admire his devotion to his family of young Roemers. To talk with him is to discover that he is one of those rare men who always will possess the spirit of youth and therefore always will have a bond of understanding with youth.

"There is great promise in the steel industry," he said recently. "The steel phase is opening up as never before and there are a great many opportunities for youth in the manufacture of iron and steel."

When the Canton Sheet Steel Co. was bought in 1917 by the Hydraulic Pressed Steel Co., Mr. Roemer was assistant general manager of the Canton interest. When the Superior Sheet Steel Co. first rolled sheets in August, 1920, he was vice president and general manager.

One of the important developments in the hot mill department at Canton consisted of the installation of a new type jobbing mill, designed and patented by Mr. Roemer, assisted by Thomas H. Heacock, chief engineer and master mechanic. Two of the four roughing mills are self-balanced and self-contained, no pinions being required for driving the upper rolls. The new mill design also eliminates the necessity of a double swing, deemed requisite when a stand of pinions is employed for driving the upper rolls, and dispenses with additional foundations and the bed plate otherwise required.

It is dangerous for a stranger in the Canton-Youngstown district to speak of Henry Roemer with anything but respect. He is a man of his word and if one finds him not in his office during work hours, one is sure to locate him out in the plant. He may be chatting with the mill crew during a "spell" or sitting on the wood bench at noon time telling stories and passing gossip in mill language. He knows them all by their first names, from the men trucking into the loading box cars to the lowest "screwboy." To them all, he is "Henry."

In steel mill realms, the usual hot mill crew is as transitory a group of workers as can be found, with feet as restless as those of the most migrant of wheat field "hands." As an example of what Mr. Roemer's friendship and square dealing methods have done, it has been many years since the Superior company has experienced a change in its mill crews.

Someone questioned him as to his education and Mr. Roemer replied with a smile: "The Youngstown Sheet & Tube Co. is my alma mater." He then went on to admit that now he is acquiring a second-hand education through the family of young Roemers, in whom their father's interest amounts almost to a hobby. The "firing line" and his family were first on the list when he was asked to name his favorite recreations. Golf, hunting, almost any form of outdoor sport and athletics, all these come in for their share of attention; but none has for him the appeal of his work and his family.

He has expressed a great and just pride in his business organization. "I believe we have the finest spirit of friendly co-operation here that I have seen in any business organization," he said recently. This refers to every employe in the company, for he believes that some of the keenest minds in steel operations can be found among the workers themselves. By this he means not only that many valuable suggestions come up from the ranks but also that the ability to think beyond one's immediate job is not confined to executives alone.

Henry Roemer is noted for his ability to put over big projects, as witness his handling of Canton's recent and highly successful exposition of progress. In community work campaign managers have come to look upon him as a leader. He served as general chairman of the local community fund in its second year, for several years has been a director of the chamber of commerce and is a past trustee of the Y. M. C. A. For several years he was president and now is vice president of the Canton Boy Scout council, showing the great interest he takes in the affairs of the younger generation. In addition he is an active member and a past president of the Rotary club. He was chairman of the community committee formed after the expose of political intrigues in Canton in the past year. Some light may be shed on his politics by the fact that he considers the three greatest Americans to have been Lincoln, McKinley and Roosevelt.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

CHARLES H. DICKEY has been elected a director of the Pacific Gas & Electric Co., San Francisco, succeeding Wiggiton E. Creed, whose death was announced in IRON TRADE REVIEW, issue of Aug. 11. Mr. Dickey was for 20 years a director of the Consolidated Gas & Electric Co., Baltimore; he was vice president and director of the Kings County Gas Co., Brooklyn, N. Y., and is at present vice president and director of the Southern Counties Gas Co., Los Angeles.

John P. Coghlan has been elected second vice president of the Gas company. He has, for the past five years, been assistant to the president.

D. H. Foote, third vice president and secretary, has been elected treasurer, also, assuming the office held by A. F. Hockenbeamer recently elected president of the company, as announced in IRON TRADE REVIEW, issue of August 25.

E. W. Hodges has been elected comptroller in charge of accounting, tax and insurance departments. He was formerly general auditor.

* * *

W. E. Ver Wayne has been appointed chief engineer of the Newson Halle Co., Cleveland, manufacturer of woodworking machines.

* * *

Lars G. Nilson has resigned his connection as chief engineer of the Nilson-Miller Corp., Hoboken, N. J., to enter consulting engineering practice. Active in the Nilson-Miller Corp. for the past 18 years, he will still serve that company as a consultant and retain his interest as a director.

* * *

Edward McCann, associated with the Scovill Mfg. Co., Waterbury, Conn., for many years, has been appointed Detroit district manager.

* * *

L. F. Rains, a vice president of the Columbia Steel Corp., San Francisco, has been elected vice president and assistant general manager.

* * *

R. H. McGredy has been appointed sales manager of the hoist division of the American Engineering Co., Philadelphia.

* * *

George F. Kublin, chief engineer, Moon Motor Car Co., St. Louis, and W. C. Wallace, sales manager of the eastern territory, have been elected directors, succeeding George F. Schelp and Alfred Moberly.

* * *

E. H. Schmitz has been made district manager of the Pittsburgh office of Riley Stoker Corp., Worcester, Mass. He has been with the Stoker corporation since 1925, devoting his time to experimental developments and tests.

* * *

Donald H. Wyre has been appointed general manager of the Allegheny lamp division, National Lamp Works of the General Electric Co., Schnenectady, N. Y. He will direct the distribution of products in West Virginia and western Pennsylvania.

* * *

John P. Frey has been elected secretary and treasurer of the metal trades department of the American Federation of Labor. Mr. Frey, a resident of Norwood, Cincinnati, has been president of the Ohio Federation of Labor, an executive officer of the International Molder's union and prominent in labor circles for 25 years.

* * *

H. F. Girbin, a graduate of the University of Michigan, Ann Arbor, Mich., has been appointed assistant professor of applied mechanics at Purdue university, Lafayette, Ind., succeeding the late Prof. C. H. Lawrence. For the past 16 years Prof. Girbin has been engaged in engineering work in the United States, Spain and other countries, at one time for two years in the construction of a copper refinery in Spain and also acting as an expert engineer, for the United States Metal Refining Co.

H. M. Jacklin, graduate of Michigan State college, East Lansing, Mich., has been appointed assistant professor of automotive engineering at Purdue university, succeeding Prof. H. A. Huebotter, who has resigned. Prof. Jacklin has taught for 12 years and has had three years of manufacturing experience. He goes to Purdue

from Ohio State university, Columbus, O., where he held a similar post.

* * *

J. Leonard Replogle returned to New York, Aug. 30, from a trip to Europe.

* * *

W. S. Pilling, president of Pilling & Co., pig iron, coke and alloy interests, Philadelphia, returned from Europe Aug. 26.

* * *

James S. Marlowe, State Life building, Indianapolis, has been appointed Indiana representative for FitzSimmons Co., Youngstown, O., manufacturer of cold drawn steel.

* * *

T. R. Fitzpatrick has been appointed general coal freight agent, Pittsburgh & Lake Erie railroad, at Pittsburgh.

D. G. Hood has been appointed coal freight agent of the road.

* * *

John K. Furst, formerly vice president and chief engineer of the Pennsylvania Engineering Works, New Castle, Pa., has been made general manager of the S. R. Smythe Co., Pittsburgh. Mr. Furst who for some years past has been chiefly engaged in the engineering and building of blast furnaces and steel plant equipment, brings to this company a long experience along general engineering lines.

* * *

M. J. Myers has been appointed assistant to the vice president of the Superior Steel Corp., Pittsburgh. He has been associated with the Republic Iron & Steel Co. and the Trumbull Steel Co.

Norman F. Melville has been appointed manager of metallurgy and inspection of the Superior corporation. He leaves the Columbia Steel Co. to assume his new position. He is a graduate of the Carnegie Institute of Technology, Pittsburgh.

* * *

M. B. Garber, associated with the Sanderson-Cyclone Drill Co., Orrville, O., for ten years, five of which he served as sales manager, has joined the sales organization of the Thew Shovel Co., Lorain, O.

* * *

Chester J. Roberts, Milwaukee, has been appointed manager of the newly-created industrial division of the Milwaukee association of commerce, which takes over the actual work of the industries committee. He is a graduate of Lawrence college and a post-graduate of the universities of Wisconsin and Illinois. He has been associated with the A. O. Smith Corp., Milwaukee, and the Milwaukee works of the Nash Motor Co., as well as the Northern Paper Mills, Green Bay, Wis.

* * *

Thomas S. Poole has been appointed direct factory representative for the southern states territory for Whitman-Barnes-Detroit Corp., Detroit, manufacturer of twist drills, reamers, etc. He will succeed Fred A. Hardin, who has resigned. Prior to the merger of the Whitman-Barnes Mfg. Co. with the Detroit Twist Drill Co. last September, Mr. Poole was associated with the Detroit company.

M. B. Snow, vice president and director of the Whitman company, has resigned and is to be succeeded by

THOMAS S. POOLE

Karl Kendig, vice president and treasurer.

H. Z. Callender, sales manager, has been made secretary and sales manager.

* * *

C. G. Emil Larsson, formerly assistant chief engineer, has been appointed chief consulting engineer of the American Bridge Co., New York. Born in Sweden in 1864, Mr. Larsson was educated in the University Preparatory School of Sweden and later attended the technical high school at Stockholm, graduating as a mechanical engineer in 1886 and as a civil engineer in 1887. He came to this country and in 1888 became draftsman for the Wrought Iron Bridge Co., Canton, O., shortly to become affiliated with the Edgemere Bridge Works, Wilmington, Del., serving as draftsman and designer until that company was absorbed by the American Bridge Co. at the time of its organization in 1900. Shortly afterward Mr. Larsson went to the Pencoyd, Pa., plant as a designer. In 1901 he was made division engineer and in 1904 assistant chief engineer, serving first at Ambridge, Pa., and later at New York.

* * *

James H. Conlon has been made sales manager, All-Steel Equipment Co., Pittsburgh. He was formerly in the retail trade in that city, and also was district manager for the General Fireproofing Co., Youngstown, O.

* * *

Fred L. Butler has resigned as treasurer of the F. A. Whitney Carriage Co., Leominster, Mass.

N. W. Foster, formerly with the National Acme Co., Cleveland, as vice president and prior to that with the Windsor Machine Co., Windsor, Vt., succeeds Mr. Butler.

Weirton Sales, Operating Divisions Recast

Pittsburgh, Aug. 30.—Sales and operating departments of the Weirton Steel Co., Weirton, W. Va., have been reorganized under three general divisions.

Sheet and tin plate mills now are under the supervision of J. M. Hill, formerly superintendent of sheet mills. F. E. Flynn, for several years superintendent of the strip mill, becomes manager of both the strip mills and the new stripsheet mills.

E. J. Anglin has charge of the general operating division embracing river docks, coke plants, blast furnaces, open hearth furnaces, blooming billet and sheet bar mills.

All three of these departments are under the general supervision of J. C. Williams, vice president and general manager, who is general operating head of the company. George W. Vreeland, effective Sept. 1, was appointed assistant to Mr. Williams. He formerly was assistant superintendent of the Mingo and Bellaire, O., works of Carnegie Steel Co.

The sales department likewise has three general sales divisions. The sheet and tin plate sales department is headed by J. J. Watson, formerly general manager of sales. H. C. Smith is sales manager in connection with stripsteel and Joseph F. Savage, who recently became affiliated with the company, has charge of stripsheet sales. L. D. Brueckel is assistant manager of sales in the strip steel division, and W. M. McFate is assistant manager of sales in stripsheets.

These three sales divisions are under the general supervision of H. D. Westfall, who continues as vice president in charge of sales.

British Steel More in Demand

Shipbuilders and Railroads Placing Additional Orders—Tin Plate Depression Continues—Pig Iron Sluggish—Better Outlook Appears in France, with Larger Inquiries

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, Aug. 30.—More activity is reported in the steel market this week. Shipbuilders are ordering heavy castings and forgings, resulting in large steel bookings. Sheffield steelworks are operating at a fair rate. Barrow and Workington steel mills also are busy. Birmingham works have good domestic and export orders for rolling stock, in some instances extending for four years. Demand for galvanized sheets is moderate, while the depression in tin plate continues.

The pig iron market still is sluggish, low prices failing to attract buyers. American consumers are taking small quantities of ferromanganese at £13 10s ($65.61) f.o.b.

New iron and steel business in Germany is reported quieter. Works are occupied with orders for three months. British pipe is competing with the German product. The Belgian market appears more active, with prices firm. The outlook in France is slightly better, with inquiries coming out in increasing numbers for larger tonnages.

British and Continental Steel Trade Is Quiet

LONDON, Aug. 17.—(*European Staff Service* — Export markets have been dull since the end of July. This is usually the case during the holiday season, but this year business, particularly in Great Britain, is devoid of interest. Many plants have remained closed beyond the usual holiday period and some furnaces have been damped. In the pig iron market demand remains on a disappointing scale and complaints are heard of the competition of cheap foreign material, especially in Scotland and in the districts near the coast. British furnace operators appear to be firm against concessions on the present price of £3 10s ($17) per ton for Middlesbrough foundry pig iron, and prefer to close rather than continue cutting prices. Continental pig iron, 2.5 to 3 per cent silicon, averages £3 ($14.55) per ton f.o.b. Antwerp, with the result it can reach the British coast at about 5s ($1.20) per ton less than the domestic price. It is noteworthy that this competition is not limited to continental pig iron, but that Indian iron also is delivered in Scotland.

In Great Britain export demand for steel is restricted. British consumers, on the other hand, are showing little confidence in the stability of continental prices and are inclined to keep off the market. Among recent engineering orders received by British firms are two 25-ton traveling cranes to be supplied by Craven Bros., Manchester, to the New Zealand railroad; four 100-ton traveling cranes ordered from Sir William Arrol & Co., Ltd., Glasgow, by the same buyer. The Stanton Ironworks, Ltd., has received an order for pipe for the British colonies. Dorman, Long & Co. Ltd. will supply steel to the Egyptian railroad.

On the continent export business is quiet, but prospects are somewhat brighter than of late and prices remain firm. Pig iron exports are falling off, notwithstanding the prevailing low prices. It is noteworthy that the average price of £3 ($14.55)

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, August 29	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON		£ s d		£ s d		£ s d		£ s d
Foundry No. 3, Silicon 2.50-3.00	$15.80	3 5 0*	$15.07	3 2 0	$15.07	3 2 0	$14.58	3 0 0
Basic	23.33	4 16 0	14.58	3 0 0	14.58	3 0 0	14.58	3 0 0
Basic-bessemer	18.47	3 16 0†	14.58	3 0 0	14.58	3 0 0	14.82	3 1 0
Hematite. Phosphorus 0.02-0.05	18.23	3 15 0	21.92	555*	.....	.....	17.25	3 11 0
SEMIFINISHED STEEL								
Billets	$27.95	5 15 0	$21.14	4 7 0	$21.14	4 7 0	$21.14	4 7 0
Wire rods	44.96	9 5 0	27.34	5 12 6	27.34	5 12 6	27.34	5 12 6
FINISHED STEEL								
Standard rails	$37.67	7 15 0	$30.98	6 7 6	$30.98	6 7 6	$30.98	6 7 6
Merchant bars	1.57c	7 5 0	1.04c	4 14 6	1.04c	4 14 6	1.01c	4 12 0
Structural shapes	1.44c	6 12 6	1.00c	4 11 0	1.00c	4 11 0	1.01c	4 12 0
Plates, hip, bridge and tank	1.68c	7 15 0	1.33c	6 1 0	1.33c	6 1 0	1.32c	6 0 0
Sheets, black, 24 gage	2.39c	11 0 0	2.16c	9 16 0	2.16c	9 16 0	2.86c	13 0 0
Sheets, galvanized, 24 gage, corrugated	3.07c	14 2 6	3.11c	14 2 6	3.71c	2,850*	3.74c	17 0 0
Bands and strips	2.28c	10 10 0	1.24c	5 12 6	1.24c	5 12 6	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.57c	7 2 6	1.57c	7 2 6	1.60c	7 5 0
Galvanized wire, base	3.04c	14 0 0	2.04c	9 5 0	2.04c	9 5 0	2.09c	9 10 0
Wire nails, base	2.82c	13 0 0	1.73c	7 17 6	1.73c	7 17 6	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.50	0 18 6	.....	.....	.....	.....	$ 6.80	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$17.01	3 10 0	$18.17	460(2)	$17.10	615	$19.78	86
Basic pig iron	....	.....	19.55	495(1)	15.57	560	20.24	88
Furnace coke	2.92	0 12 0	6.72	170	5.14	185	4.95	21.50
Billets	27.95	5 15 0	19.75	500	21.55	775	25.88	112.50
Standard rails	1.74c	8 0 0	1.43c	795	1.43c	1,100	1.46c	140
Merchant bars	1.74c	8 0 0	1.00c	555	1.14c	875	1.40c	134
Shapes	1.65c	7 12 6	1.00c	530	1.11c	855	1.37c	131
Plates, ship, bridge and tank	1.82c	8 7 6	1.25c	695	1.40c	1,075	1.55c	149
Sheets, black, 24 gage	2.49c	11 10 0	2.34c	1,300	2.21c	1,700	2.29c	220
Sheets, galvanized 24 gage, corrugated	3.04c	14 0 0	3.38c	1,880	3.90c	3,000	3.65c	350
Plain wire	2.12c	9 15 0	1.62c	900	2.15c	1,650	2.03c	195
Bands and Strips	2.28c	10 10 0	1.28c	710	1.30c	1,000	1.61c	154

*Middlesbrough; †Scotch foundry iron: (1) Basic-bessemer; (2) Longway. British export furnace coke £0 12s 0d ($2.92) f. o. b. Ferromanganese £18 11s 3d ($90.21) delivered Atlantic seaboard, duty paid. German ferromanganese £15 0s 0d ($72.90) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg and German are for basic-bessemer steel.

per ton f.o.b. Antwerp, which continental producers are quoting for foundry pig iron is below their own domestic price. In France the price of £3 corresponds to 372 francs, including transportation rates to Antwerp, whereas the domestic price is 360 francs. Complaints are freely expressed on this ground by domestic consumers. A similar margin between export and domestic prices exists in Belgium and Luxemburg. The Franco-Belgo-Luxemburg pig iron entente has been patched up. The basis price for foundry pig iron, for small lots, is fixed at £3 5s ($15.75), and rebates are fixed for orders exceeding 1000 tons. In actual working, however, the average quotation is about £3, irrespective of the size of the order. In fact, large orders are the exception.

For steel, continental export prices have hardened and are about on a parity with home prices, if not slightly higher. Makers appear to be determined not to accept any more concessions, and are even refusing orders at lower prices than those which recently have been prevailing. Two-inch billets average £4 7s ($21.10), merchant bars £4 13s 6d ($22.60), beams £4 10s 6d ($21.90), plates £6 ($29). The French are quoting £6 for plates ⅜-inch and thicker, whereas the Belgians quote £6 for ¼-inch plates and £6 1s ($29.25) for ⅜-inch plates. All these prices are f.o.b. Antwerp. Wire rods and wire products are offered at the prices fixed by the entente: £5 12s 6d ($27.35) for wire rods, £7 5s ($35) for bright wire, £9 10s ($46) for galvanized wire and £7 17s 6d ($37.50) for wire nails. Belgian makers may quote a discount of from 3 to 5 per cent on the latter prices.

Although Belgian reports are to the effect that German competition is reappearing on export markets, especially for semifinished steel, it is reported by the London iron and steel exchange that the Germans are buying French, Belgian and Luxemburg steel and that the great activity in the German home market not only absorbs the German output but makes these importations possible. According to German reports, home business is active and exports are quiet. German makers have encountered American and British competition in the tube department, but conversely cast iron pipe makers are enjoying active business; from January to May the United States imported 27,000 tons of cast iron pipe from Germany. Recent orders have been passed at about £13 ($63) per ton f.o.b. northern sea ports.

German Steel Demand Is Holding Up Well

Berlin, Aug. 17.—(*European Staff Service*)—In its monthly report from Essen the association of steelmakers states that during July domestic demand for semifinished steel, merchant bars and shapes continued satisfactory. Manufacturers of rolling stock have received considerable orders and have in turn ordered large quantities of profiles. Demand for hoops and bands, heavy plates and track materials subsided slightly. Export business continued to be of a small volume and export prices are not considered sufficiently remunerative. Generally speaking, plants have enough orders to keep going for several months. The tube union in its July report registers a decrease of orders, not only in the domestic market but still more so in export markets. Although this is generally the case at the time of year, the reduction is particularly ascribed to the fact that over-production in the oilfields is causing a substantial falling off in demand for tubing. With regard to current demand, British and American competition is felt more in the export markets.

Belgo-Luxemburg Steel Exports Larger

Brussels, Aug. 17.—(*European Staff Service*)—Exports of steel from the Belgo-Luxemburg Economic Union during the first half year showed an increase of 59 per cent over the corresponding figure of last year, the tonnage exported this year being 2,244,159 metric tons, compared with 1,409,600 tons during the first six months of 1926. The highest figure of steel imports for any month this year was reached in March with 440,445 metric tons, the record shipment having been attained in December, 1926, with 458,887 tons. During the first half of this year exports of Belgian and Luxemburg pig iron amounted to 73,249 metric tons, against 69,637 tons in the first half of 1926.

During the first half year imports both of pig iron and steel were higher than in the corresponding period of 1926. Imports of pig iron were 168,461 metric tons in the period ending June 30, 1927, compared with 161,527 tons in the corresponding period of last year. Imports of steel were 156,840 metric tons and 148,528 tons respectively. Comparative figures follow, in metric tons:

Mon.	IMPORTS		EXPORTS	
ave.	Pig iron	Steel	Pig iron	Steel
1925	27,095	15,860	8,060	242,325
1926	27,505	27,265	13,105	304,075
1927				
Jan.	30,253	23,086	17,742	332,921
Feb.	21,876	20,793	8,191	367,723
March..	26,172	33,192	10,713	440,445
April	27,351	26,579	15,363	372,296
May	27,843	24,229	10,766	371,211
June	34,966	28,961	10,474	359,563

The value of iron and steel mill products exported from the United States increased from $157,200,000 in the fiscal year 1926 to $178,100,000 in the fiscal year 1927, according to the department of commerce.

Belgian Trade Dull; Prices Firm

BRUSSELS, Aug. 17.—(*European Staff Service*)—Dullness prevails in the Belgian iron and steel market, chiefly due to seasonal influence. Prices, however, are firm, as producers, who are complaining about the small number of orders, have taken a firm attitude and have refused to reduce prices below the present level. This firm tendency was confirmed at the meeting of the iron and steel exchange in Brussels Aug. 10, and it was noted that French competition was less keen than previously. On the other hand, it has been noted that the Germans are returning to the market and are soliciting orders, especially in semifinished steel. A slightly better demand has been registered on the part of the Far East markets, although these still are completely disorganized. Many concerns can offer delivery at short notice, which indicates that order books are somewhat depleted. However, there is a return of confidence and it is expected that toward the beginning of next month there will be a revival of demand.

Franc-2.78c

Foundry pig iron, 2.5 to 3 per cent silicon, continues to be quoted at 610 to 620 francs ($17 and $17.20) per metric ton. Hematite pig iron is sold at 700 to 725 francs ($19.45 and $20.20), while basic bessemer pig iron ranges from 550 to 570 francs ($16.30 to $16.85). There is fair demand in the domestic market, but export business is on a small scale. Semifinished steel is inactive, both buyers and sellers maintaining an expectant attitude. Two-inch billets are offered at not less than £4 7s ($21) per ton f.o.b. Antwerp.

Merchant bar manufacturers generally quote about £4 14s ($22.65), and certain concerns refuse to go below £4 15s ($23) but no business is transacted at the latter price. A few orders, however, have been passed at £4 13s 6d ($22.60) and all concessions under that quotation are refused. Luxemburg makers refuse to go below £4 14s ($22.65). The price of beams averages £4 10s 6d ($21.85), and a hardening of prices is expected. Business in wire rods is practically absent, but the price remains fixed by the entente at £5 12s 6d ($27.65). Demand for hoops and bands is small and prices fluctuate, the average base price being £5 10s ($26.60).

Slow improvement is registered in wire products, in the export as well as in the domestic market. Bright wire is 1650 francs ($46), galvanized wire 2050 francs ($57) and wire nails 1700 francs ($47.50), basis. The plate and sheet market is firm, especially in plates, which are quoted at about 1075 francs ($48.60). On the whole, this being the holiday period, the market can be considered as being in a more satisfactory condition than was expected at the end of last month.

Current Statistics of Industry

Steel Castings Output, Bookings Drop

Washington, Aug. 30.—Production of steel castings in July continued to decline, the total being 74,941 tons, compared with 81,907 tons in June and 87,040 tons in July, 1926, according to figures from the department of commerce. July bookings also declined, totaling 71,403 tons compared with 84,466 tons in June. Production was at 56 per cent of capacity in July, dropping from 62 per cent in June. Further comparisons follow:

BOOKINGS

1926	Net tons	Per cent of capacity	Railway specialties net tons	*Miscellaneous castings net tons
July	76,276	58	29,266	47,010
Total 7 mos.	628,604	68	243,432	385,172
Aug.	68,127	51	22,998	45,129
Sept.	67,363	51	22,031	45,332
Oct.	74,680	56	27,827	46,853
Nov.	71,124	54	28,079	43,045
Dec.	86,006	65	38,111	47,895
Total, *12 mos.	996,266	63	382,478	613,426
*1927				
Jan.	101,768	77	48,717	53,051
Feb.	91,797	69	39,792	52,005
Mar.	82,558	62	31,380	51,178
Apr.	78,352	59	31,004	47,348
May	66,736	50	24,644	42,092
June	84,466	64	34,702	49,764
July	71,403	54	29,906	41,497
Total 7 mos.	577,080	62	240,145	336,935

PRODUCTION

1926				
July	87,040	66	30,694	56,346
Total 7 mos.	685,507	74	275,634	409,873
Aug.	81,422	61	26,088	55,334
Sept.	79,471	60	22,837	56,634
Oct.	79,804	60	25,737	54,067
*Nov.	86,626	65	24,421	62,205
*Dec.	82,336	62	28,699	52,637
Total *12 mos.	1,095,166	69	403,416	691,750
*1927				
Jan.	84,674	64	32,982	51,692
Feb.	85,464	64	33,250	52,214
Mar.	97,329	73	38,784	58,545
Apr.	90,570	68	36,693	53,877
May	81,950	62	31,659	50,291
June	81,907	62	30,538	51,369
July	74,941	56	29,603	45,338
Total 7 mos.	596,835	64	233,509	363,326

*Revised.

Output of Malleable Castings Declines

Washington, Aug. 30.—Malleable castings output in July decreased, totaling 48,202 tons compared with 58,972 tons in June, according to reports of 134 manufacturers to the department of commerce. Shipments also decreased in July, the total being 48,265 tons compared with 55,723 tons in June. July operations were at 43.9 per cent of capacity, compared with 55.3 per cent for May. Other monthly comparisons follow:

	Total tons produced	Per cent of capacity	Total tons booked	Monthly capacity
Total 1925	737,532	54.4	653,233	1,355,315
1926				
July	55,555	51.1	55,766	**108,655
Total (7 mos.)	446,472	57.9	386,063	770,447
August	57,541	52.7	48,922	**109,161
September	58,376	53.7	47,130	**108,627
October	57,175	52.6	45,490	**108,638
November	45,793	42.7	40,294	**107,185
December	50,017	48.2	40,051	103,831
Total 1926	*715,384	*54.7	607,949	1,307,889
1927				
January	*51,492	48.8	50,994	105,619
February	*57,380	54.8	58,039	104,686
March	66,372	62.2	53,597	106,698
April	59,225	55.8	56,326	106,163
May	57,655	54.1	49,482	106,473
June	58,972	55.3	46,178	106,736
July	48,202	43.9	45,782	104,287
Total (7 mos.)	399,298	48.7	360,398	740,662

*Revised.

**Capacity since May has been based on following formula: "Total number of units of molding floor space, times average production per molder per day per unit of floor space, times number of actual working days per month."

Babbitt Consumption Low

Washington, Aug. 30.—Total apparent consumption of babbitt metal in July was 4,604,786 pounds, a drop from 4,854,653 pounds in June, according to reports of 31 companies to the department of commerce. Sales by manufacturers also decreased, while consumption by producers increased. Further comparisons follow:

	Total apparent consumption	Sold by manufacturers	Consumption by producers
	(Figures given in pounds)		
1925 Total	69,023,831	54,897,706	14,126,125
1926			
July	5,469,047	4,130,247	1,338,800
Total, 7 mos.	39,714,243	30,752,253	8,961,990
August	5,744,219	4,390,314	1,353,905
September	5,749,991	4,267,661	1,482,330
October	5,471,086	4,132,114	1,338,972
November	4,747,045	3,600,145	1,146,900
December	4,508,198	3,412,623	1,095,575
Total, 1926	65,934,782	50,555,110	15,379,672
1927			
January	5,439,689	4,219,998	1,219,691
February	5,452,200	4,385,951	1,066,249
March	5,626,400	4,418,409	1,207,991
April	4,812,045	3,862,005	950,040
*May	4,945,705	3,975,104	970,601
June	4,854,653	4,024,810	829,843
July	4,604,786	3,162,325	1,442,161
Total 7 mos.	35,735,478	28,048,602	7,686,876

*Revised.

July Foundry Equipment Sales Off

Cleveland, Aug. 30.—Foundry equipment sales in July took a decided drop to $330,099, compared with $507,834 in June, according to reports from 18 members of the Foundry Equipment Manufacturers' association. Shipments in July amounted to $460,748, compared with $555,805 in June, while unfilled orders showed a gain of 18 per cent from July 1 to Aug. 1. Further comparisons follow:

1925	Sales	Shipments	Unfilled orders
Total	$4,665,300	$4,362,794	
1926			
Tot. (7 mos.)	$3,570,487	$3,485,859	
Aug.	403,608	396,293	424,206
Sept.	355,339	345,025	421,718
Oct.	410,243	343,593	367,579
Nov.	359,936	331,345	419,888
Dec.	582,896	458,040	445,608
Total, 1926	$5,255,352	$5,068,652	
1927			
January	$ 659,417	$ 373,229	$ 683,956
February	684,836	484,699	945,505
March	508,531	603,735	1,086,310
April	478,273	601,808	995,075
May	493,801	503,747	838,752
June	507,834	555,805	705,909
July	330,099	460,748	616,056
Aug. 1			731,649
Tot. (7 mos.)	$3,662,791	$3,583,771	

Plate Bookings Increase in July

Washington, Aug. 30.—Total bookings of fabricated steel plate in July were 35,320 tons, compared with 28,831 tons in June and 37,158 tons in July, 1926, according to reports from 51 companies to the department of commerce. The following table has been revised by the addition of newly reporting concerns and presents further monthly comparisons.

		Oil storage			*Stacks and miscellaneous
Total	*Total	tanks	*Gas holders	Blast furnaces	
1923	581,873	303,416	53,415	9,815	161,513
1924	348,332	124,959	50,641	12,601	130,822
1925	385,524	99,134	42,273	12,651	165,289
1926					
July	37,158	12,827	2,401	989	17,452
Total (7 mos.)	286,178	77,767	36,400	8,614	128,468
Aug.	51,045	21,723	1,911	1,728	17,009
Sept.	38,739	17,038	1,491	861	13,023
Oct.	44,974	23,094	1,333	994	14,316
Nov.	63,119	26,269	4,531	418	11,406
Dec.	29,858	9,476	1,858	1,791	12,627
Total (year)	513,913	175,367	47,524	14,406	196,849
1927					
Jan.	36,114	14,342	1,994	568	10,099
Feb.	59,643	32,983	3,334	606	16,647
March	55,407	24,127	5,135	857	17,900
April	47,347	18,019	9,450	420	15,069
May	37,883	10,855	2,524	364	20,865
June	28,831	7,402	2,263	1,026	15,212
July	35,320	17,199	1,034	537	14,268
Total (7 mos.)	300,545	124,927	25,734	4,378	110,150

Obituaries

EDWARD Y. MOORE, 80, former president of the Chisholm-Moore Mfg. Co., Cleveland, maker of hoisting machinery, died at his home in that city Aug. 24. He had developed a number of railway appliances, hoisting apparatus and pneumatic lifts and tools, turning later from inventions to business. With the late Judge Elbert H. Gary, Charles W. Schwab and others, Mr. Moore organized the Chicago Pneumatic Tool Co. in a merger of five plants in 1901, and became its vice president. He was born in Astoria, N. Y., and then lived for a while in Milwaukee. He went to Cleveland from Chicago, in 1903, organizing the Chisholm-Moore company, headed now by his son, Samuel H. Moore.

* * *

Stephen Y. Baldwin, formerly first general agent of the Delaware & Hudson railroad in the Pittsburgh district, died recently at Guelph, Ont.

* * *

Johnson R. Abbott, 73, foundry owner and maker of gray iron, brass and aluminum castings under his name, of Greenfield, Ind., died recently.

* * *

Charles F. Wheaton, president and general manager, Dodge Mfg. Co. Ltd., Toronto, Ont., aged 68, died at his home in that city recently. He was born at Brantford, becoming identified with the Dodge company in 1883. He was a member of several clubs including the Toronto and Montreal, Que., Engineers' club.

* * *

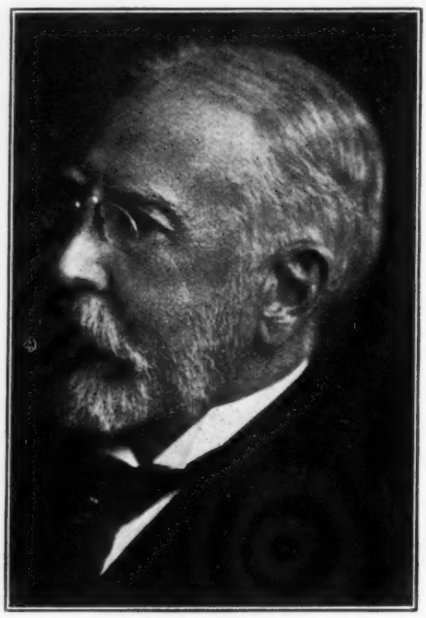
James W. Walker, one of the founders of the Cleveland Wire Cloth & Mfg. Co., Cleveland, died at his home in that city, Aug. 29. He had designed practically all of the machinery used by the company since its organization 13 years ago. At the time of his death, Mr. Walker was superintendent.

* * *

Harry Bronson Snell, superintendent of the Turner Construction Co., New York, died recently. He entered the employ of the Turner company, in 1917 as assistant superintendent and was made superintendent the following year. Prior to his connection with that company he was associated with the Hartford Street Railway Co. as assistant engineer, the Hydrex Filtration & Engineering Co., and later as assistant engineer on design for the Brooklyn Grade Crossing commission.

* * *

C. L. Johnson, 54, an executive of the manufacturing department of the Western Electric Co., New York, died Aug. 24 at Pittsfield, Mass. Mr. Johnson was graduated from Cornell university in 1897. Two years later he went with the Western Electric Co. in Chicago, later going to Montreal as assistant manager of the Northern Electric Co., an associated company. After making special studies in the company's European plants, Mr. Johnson returned to the Hawthorne works at Chicago in 1914 and assumed the clerical superintendency of the entire plant. In 1923 he became general clerical superintendent of the company, with headquarters at 195 Broadway. In 1926 he was appointed office procedure engineer in the same office.



EDWARD Y. MOORE

* * *

Harrison E. Dunbar, for 25 years superintendent of the South Hadley Electric Light Co., South Hadley, Mass., and during the war chief inspector of the Westinghouse Electric & Mfg. Co. plant at Chicopee Falls, Mass., died at his home at West Springfield, Aug. 25. Previous to his illness he was a member of the planning department of Gilbert & Barker Co., West Springfield.

Loss Is Shown By Lake Superior Corp.

Toronto, Ont., Aug. 30.—An unfavorable position for the Lake Superior Corp., Sault Ste. Marie, Ont., is disclosed by its report for the year ended last June 30. Net earnings from operations of subsidiary companies, excluding the Algoma Central and the Hudson Bay railroads, totaled $1,158,979. Interest on bonds of subsidiary companies, on bank and other advances, their rentals, minus interest earned on bank balances and investments, was $1,253,205. Considering $98,083 set aside for depletion and depreciation, the net loss for the year was $192,309.

In the fiscal year 1927 the corporation's production of pig iron was 230,966 gross tons compared with 170,196 tons in the year preceding. Its production of steel ingots was 213,719 tons against 185,149 tons the year previous. Sales of all products in the fiscal year 1927 amounted to $10,262,190 compared with $8,792,560 in the preceding year.

Form United Chromium To Further Plating

United Chromium Inc. has been formed for the development of the art of chromium plating and its practical applications. Among the patent rights owned or controlled by United Chromium Inc. are those heretofore owned or controlled by the Chromium Corp. of America, Electro Metallurgical Co. and General Chromium Corp. Inquiries are solicited through Chromium Corp. of America, 120 Broadway, New York, and General Chromium Corp., 3220 Bellevue avenue, Detroit.

Directors are: Andrew E. Baldwin, Detroit; William F. Barrett, New York; F. M. Becket, New York; Fred J. Fisher, Detroit, C. Roy Gleason, Chicago; F. H. Hirschland, New York; Benjamin O'Shea, New York; John T. Pratt Jr., New York; Hubert E. Rogers, New York; R. C. Stanley, New York; and F. S. Wheeler, New York.

Extensions Are Improved

Interstate commerce commission has granted the application of the Toledo & Cincinnati railroad, a subsidiary of the Baltimore & Ohio railroad, to construct extensions in Butler county, Ohio. These extensions will enable the Middletown, O., plant of the American Rolling Mill Co. to obtain hot metal from the blast furnace at Hamilton, O.

Machinery

Sales Show Some Improvement Over July, But Volume Still Disappointing—Aeronautical Buying Features Eastern Market.

ACTIVITY in the machine tool and equipment markets reports sales of unsatisfactory volume, but still of a better tone than in July. Inquiries are slightly more numerous, but involve no great amount of machinery per inquiry. A hopeful sign is that the demand is general. Aeronautical buying features the New York market, two companies placing equipment. Recent orders placed by the Wright Aeronautical Corp. probably total $50,000, and additional orders near closing involve a similar amount. New York Central railroad has purchased a few machines. In the Chicago territory, several railroads are in the market and it is reported that one automobile manufacturer will call for equipment shortly. Generally the automotive industry is quiet.

New York, Aug. 30.—Machine tool orders are coming through slowly, but inquiry is better and the general tone of the market shows improvement. One feature of trading is buying by aeronautical companies. One concern in this district has just closed on several machines, and the Wright Aeronautical Corp., Paterson, N. J., which closed on possibly $50,000 of equipment in July, and some scattered machines since, is expected to close on around $50,000 of machine tools within the next week or so. New York Central has bought at least five machines for Albany, N. Y., including four lathes purchased from one seller. The Union Pacific has bought a 16-foot by 36-inch lathe from the Pratt & Whitney Co., which also closed on a roll-grooving machine for a concern in Buffalo and a deep hole driller for an automotive company in Detroit. Interest is manifested in the announcement that specifications will be bought out shortly on 10,000 to 12,000 tons of structural steel for new shops for the transit commission in 207th street. While it is believed that the machine tool lists will not be issued for some time, they, nevertheless, will be heavy. Machine tool equipment will also likely be required by Chicago Pneumatic Tool Co., which is now inquiring for seven overhead cranes for Franklin, Pa.

Pittsburgh, Aug. 30.—Scattered inquiries and piecemeal sales characterize the machine tool market. Much hope is held out by dealers for better trading after the exhibitions. One or two large sellers here report August as a better selling month than July, but with several others the exact opposite is true. Large lists are absent, but some are expected to develop before the end of September. Two crane orders are noted, one 5-ton for the Jones & Laughlin Steel Corp., and two 10-ton for the Berger Mfg. Co.

Chicago, Aug. 30.—Activity in machine tools, both as to inquiry and sales, has tapered off. On the other hand, indications are that August business with most dealers will be slightly ahead of July and it is not considered likely that this month will prove to be the low month of the year thus far. New York Central has an inquiry out for three motor-driven grinders, and it is understood Chicago, Milwaukee & St. Paul will be in the market before long for special tools for its new rail reclamation plant. The latter road purchased a used boring machine during the week. Grand Trunk has bought a 30-inch 16-foot lathe, and Rock Island has closed on its inquiry for a 36-inch shaper and two bolt headers. Chicago, St. Paul, Minneapolis & Omaha has practically closed its list with the purchase of a car wheel borer. Still outstanding in the latter inquiry is an open-side shaper-planer. Further delay has resulted in the purchase of machine tools by the Chicago board of education for Lane Technical high school and several other schools.

CRANE ORDERS PLACED

Two 7½-ton electric overhead cranes for Harris Structural Steel Co., New York, to Harnischfeger Corp.

Two gantry cranes for New York Central railroad, one for installation in Syracuse, N. Y., and other in Rochester, N. Y., to McMyler-Interstate Co.; two 50-ton electric overhead cranes for shops at Harmon, N. Y., and 10-ton electric overhead crane for shops at Buffalo still are pending.

Two 2-ton handpower cranes for Irwin Creek disposal, Charlotte, N. C., to New Jersey Foundry & Machine Co.

Two 10-ton cranes for Berger Mfg. Co., Canton, O., to Morgan Engineering Co.

Among single orders were: 20-ton electric crane for Nazareth Cement Co., Nazareth, Pa., for Cleveland Crane & Engineering Co.; 2-ton handpower crane for H. Gottesfeld & Sons, Brooklyn, stonecutters, to New Jersey Foundry & Machine Co.; 40-ton electric gantry crane for eastern interest, reported placed with Whiting Corp.; 3-ton single I-beam electric crane for Brooklyn Foundry Co., Astoria, Long Island, N. Y., to Shepard Electric Crane & Hoist Co.; 5-ton electric crane for A. T. Petrille, Mount Vernon, N. Y., to Northern Engineering Works; 10-ton electric crane for United States Cast Iron Pipe & Foundry Co., Addison, O., to Harnischfeger Corp.; 5-ton crane for Hazelwood works, Jones & Laughlin Steel Corp., Pittsburgh, to Shaw Crane Works; 2-ton motor-driven crane for Decorative Stone Co., New Haven, Conn., to H. D. Conkey & Co.; 1½-ton motor-driven crane for National Radiator Co., Cleveland, to H. D. Conkey & Co.; 5-ton geared handpower crane for W. F. & John Barnes Co., Rockford, Ill., to H. D. Conkey & Co.; 3-ton jib crane for Frost Mfg. Co., Galesburg, Ill., to H. D. Conkey & Co.; 1-ton motor-driven crane for Lidgerwood Mfg. Co., Elizabeth, N. J., to H. D. Conkey & Co.; 5-ton motor-driven crane for General Motors Truck Co., Pontiac, Mich., to H. D. Conkey & Co.

CRANE ORDERS PENDING

Seven electric overhead cranes, ranging from 5 to 15 tons capacity, for Chicago Pneumatic Tool Co.; bids asked.

Reports are that one of the automotive interests in this territory may be in the market shortly for machine shop equipment. Mississippi Valley Structural Steel Co. has bought several used tools for the machine shop in its new plant at Melrose Park, Ill.

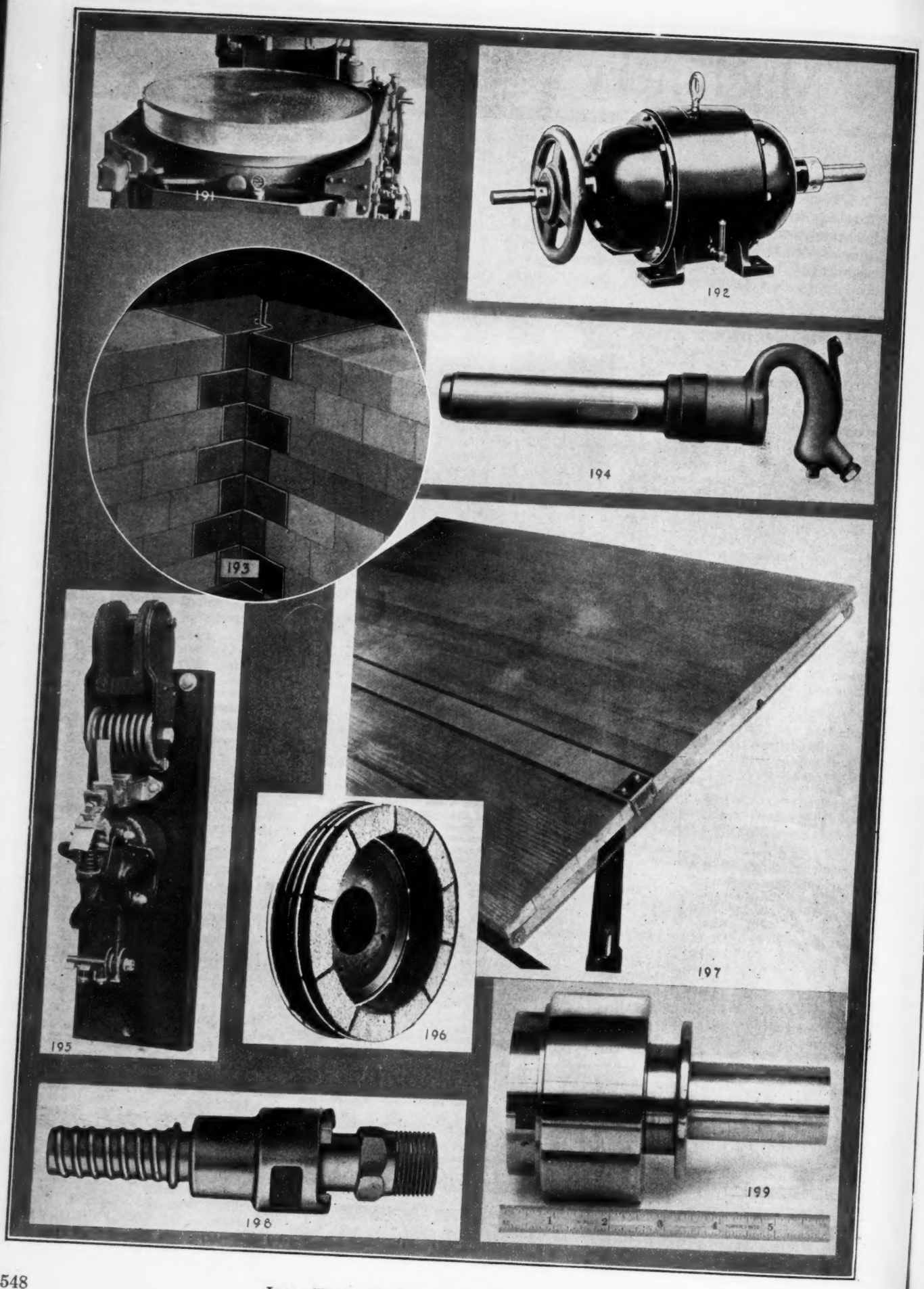
Worcester, Mass., Aug. 30.—The machine tool market shows little change and inclines to be spotty. Where one shop is reported to have taken a miscellaneous list of machine tools this week and others are busy, an equal number are booking little business. The demand for heavier tools is not brisk. Sales this week included a fair amount of bench and smaller tools, a press, grinder, some production lathes, an 18-inch radial drill and a milling machine. Several forging shops have taken business for a Detroit interest for automobile production.

Boston, August 30.—It is the opinion of machinery men that August will make a better showing than July. Inquiries are better though both inquiries and orders run small.

Cleveland, Aug. 30.—There is little to report in the way of new business in this territory, although the change, if any, is upward. Current inquiries call for only one or two machines at a time. Dealers and manufacturers alike are optimistic over the machine tool show to be held here Sept. 19-23, but believe the show alone will prove little incentive to buying unless a demand for equipment exists. The Detroit area remains quiet as it has all summer.

Building Plant for Cold Pressed Nuts

Pittsburgh, Aug. 30.—Cold pressed steel nuts will be made exclusively in the new plant which the Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y., is erecting on an 18-acre site at Coraopolis, Pa. The land and buildings represent an investment of $1,500,000 tons and the machinery about $2,000,000. Initial production will be 100 tons per day. The main factory building will be 288 x 350 feet, two stories, of reinforced concrete and steel. The Austin Co., Cleveland, has the contract. A. N. Bradford, of the Rock Falls, Ill., plant of the company, will be general manager of the new plant.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Improved Magnetic Chuck of Large Diameter

No. 191

For use on a high-power surface grinder it manufactures, a tool builder has designed an oversize magnetic chuck 36 inches diameter. This chuck is built into the machine in place of the standard 26-inch chuck and is not removable. It reduces the vertical range of belted models to 8 inches and direct motor drive models to 10 inches. Its face is of the fine divided type and is magnetic to the extreme edge. The chuck is recommended for rings up to 36 inches diameter, for pieces too long or irregular to arrange well on smaller chucks. It is also suitable for small pieces, but if these present any considerable area, a large open space should be left in the center to avoid excessive area of wheel contact.

Variable Speed Reducer Employs No Gears

No. 192

A new variable-speed transmission on the market is of the gearless type and resembles an electric motor. It performs the primary function of receiving power at constant high speed and delivering the same power at a reduced speed for the direct operation of various machines. The rotation of the low-speed shaft can be increased or decreased over a wide range, smoothly and under positive control of the operator. This output speed variation is regulated by turning a small handwheel and the increase or decrease is accomplished either while the machine is at rest or in motion. The mechanism is totally enclosed in a dust-tight housing and operates in a constant bath of oil.

Furnace Bonding Tile Is of Expansion Type

No. 193

Economy in the maintenance and substantial lengthening of the life of furnace walls are said to be effected by a flexible corner bonding tile recently announced. This tile gives a good bonding in both side and end walls and provides ample clearance for expansion at the corners. It also ties together the side and end walls, preventing the front wall falling inward. The tile is the thickness of one course of brick and serves as a starting brick for each course. The joints break at each succeeding course and form a perfect corner of the inner 9-inch refractory lining. The tile in each course overlaps the next lower course, further strengthening the structure. The tile is developed for use when the brick are set in the solid header or quarter bond patterns.

Riveting Hammer Features New Main Valve

No. 194

The chief feature of a new riveting hammer just announced centers in the main valve which is tubular and through which the piston passes. The hammer is actuated by live air in both directions to insure a uniform and steady action. It is short, light in weight, has solid walls free from port holes and is reinforced at the lower end as a protection against injury from piston slap. Pistons of different lengths may be used without detriment to the tubular valve. A cushion chamber in the rear end of the valve block absorbs all shock or recoil.

Improves Direct-Current Mill Contactors

No. 195

Remarkable improvements in contactor life which will effect considerable saving in renewal parts have been made in a line of direct-current mill contactors. These improvements are the result of a series of tests undertaken co-incident with the development of the inductive time limit type or controller for steel mill applications. Research was conducted to determine the effect of the shape and the material used in the contacts themselves, the shape and material of the arcing tips, the location and intensity of the magnetic blowouts, and the material used for the magnetic blowout shields.

Designs Segmental Wheel for Blade Grinding

No. 196

To increase the efficiency in grinding steel shear blades, a new type of segmental grinding wheel has been placed on the market. The ten abrasive segments, which are large-grain, soft-bond carborundum, are mounted in a forged steel chuck and are reinforced by three steel wire bands. The chuck gives perfect support to the segments by centrifugal force. As the segments wear down, the bands are cut away one by one. The segments can be used until they are worn down to the chuck and no abrasive is wasted. The chuck then is ready for refilling. To facilitate installation and removal, the chuck is fastened by eight bolts to a flange which is pressed and keyed permanently on the spindle.

Parallel Rule Attachment Aids Drafting Work

No. 197

To those engaged in design and drafting room work, a new parallel rule attachment for the drawing table. The device is constructed entirely of metal, consists of a very few parts and slides smoothly and freely between the top and bottom of the board. It is entirely beneath the table top. Four sprocket wheels connect the double chain drive and a revolving shaft between two of the wheels maintains uniform operation. Sliding along on the face of the board, one at each side, in parallel position to each other, are two special clamps designed for holding any standard straight edge.

Air Hose Coupling Made Easy To Connect

No. 198

The plain-type air hose coupling shown in the illustration is connected or disconnected with one-quarter turn and is made without springs or loose parts. A special treated leather gasket is used which is expanded by a V-shaped ring when the air pressure is applied. This makes it a pressure seated coupling which is air-tight under any pressure and conditions. The gasket cannot pull out of the coupling nor will it stick or corrode. When this gasket shows any perceptible wear, a slight turn of the nut on the male half will immediately adjust the wear. The coupling is made interchangeable in ⅜, ½ and ¾-inch sizes for pipe and hose lines.

Rotating Die Heads Have Smaller Diameters

No. 199

A new design of die head just announced and shown on the opposite page is intended for use on rotating die spindles. The head is both opened and closed by means of one yoke which engages the spool or groove in the rear of the head. It has a smaller outside diameter and improved locking and tripping mechanism and is also light weight. It is claimed to provide most accurate adjustment for length of thread cut. Because one head opens and closes the head, its use on automatic screw machines is simplified.

Coming Tool Shows Bring Out New Models

(*Concluded from Page* 505)

a simultaneous Machine Tool Congress. Authorities in the design, manufacture and uses of machine tools will discuss various phases of the industry. On Sept. 19 and 20, the congress will be at the Hotel Winton and on Sept. 21 and 22, at the Hotel Cleveland.

Concurrently with the Cleveland show, the ninth annual National Steel and Machine Tool Exposition will be in progress in Detroit. Four national technical associations interested in metals and metalworking are holding simultaneous conventions, consequently the week has been designated National Metal Week. The participat-

The exposition is sponsored by the American Society for Steel Treating and will occupy approximately 93,000 square feet of floor space. A portion of the space has been reserved for a welding exhibit under the auspices of the American Weldiing society. Exhibitors will total about 300 and will include a number of machine tool manufacturers, particularly those engaged in the production of the lighter machines, such as drills, planers, shapers, grinders, saws, chucks, etc.

The Society of Automotive Engineers will conduct sessions in Cleveland on two days and in Detroit on two days, in order that its members will have the opportunity to visit both expositions. It is expected that many prospective machine tool purchasers will also attend both.

In the accompanying digest, IRON TRADE REVIEW presents descriptions and announcements of an unusually large number of machine tools and items of shop equipment, the majority of which will be seen for the first time on display at the machine tool shows. As these tools represent the latest in design, machine tool users will find in their descriptions much which will prove of interest.

Melts Nonferrous Metals with Electricity

No. 200

A new electric melting pot has been introduced for melting solder, lead, babbitt, etc. with capacity from 27 to 40 pounds. It may be operated on either 110 or 220 alternating or direct current circuits. The unit is of sheet steel cylindrical casing, 10 inches deep and 9 inches diameter, in which is supported a cast-iron crucible, 4 inches deep and 6 inches diameter inside.

Screw-Type Takeup Has a Long Range

No. 201

A manufacturer of conveyor machinery has announced an improved design takeup for heavy work and long movement. The diameters of screws, lengths of bearings, strength of frames have been proportioned for the size of shaft, etc. The frame is of welded structural steel.

Portable Instruments for Alternating Current

No. 202

A new type of portable alternating-current instruments have been designed for general testing and inspecting work in industrial plants and power stations. Ammeters and voltmeters are supplied and both are double rated. The scale length is about 3 inches.

Geared Head Lathe Built for Production

No. 203

A sliding geared head lathe with a swing of 16½ inches and 30 inches between centers when furnished with a bed of 6 feet now is on the market. The head is equipped with nine gears and gives eight spindle speeds ranging from 16 to 384 revolutions a minute. The change bank gives a range of feeds from 0.0025 to 0.160 and threads from 2 to 128. Two levers are provided for friction start and stop.

Radial Drill Designed To Do Heavy Duty

No. 204

A heavy duty radial drill made in three sizes with controls of all movements operated at the head is a recent development. All the 36 selective speed changes are had with 17 alloy steel sliding gears operated with three levers. Eighteen selective feeds are obtained with two levers. The feeds range from 0.003 to 0.125 per revolution including pipe tap leads of eight to 11½ and 14 threads an inch.

Gasoline Excavator Has Speed in Action

No. 205

A new one-half excavator, which revolves at the rate of 5½ times a minute, has been developed. The machine is equipped with a 50-horsepower motor, and, with an 18-foot boom, 13¼-foot dipper sticks and a heavy plate steel dipper it weighs 40,500 pounds. The machine may be used as a shovel, dragline, clamshell, pile driver, etc. It handles a ½-cubic yard clamshell bucket on a 35-foot boom and has a lifting capacity of 11,400 pounds at 12-foot radius.

Builds Surface Grinder for Accurate Work

No. 206

A surface grinder for extremely accurate work has been introduced. Gearing in the saddle and table movement has been eliminated. A hydraulic feed which reciprocates the table at a variable rate is installed. A one-piece base casting is employed. For rapid adjustment used in raising and lowering the wheel head a considerable distance, a large hand wheel is used.

Offers New Line of Self Opening Die Heads

No. 207

A new line of stationary self-opening die heads for use on hand-screw machines, turret lathes, etc. has been developed. The head is opened or closed axially being accelerated by two springs. The chasers are removed by pulling up a spring stop plunger. A fraction of a turn of the adjusting ring on the back of the head and the size is adjusted and locked in place by a spring pin.

Tension Sleeve Coupling Gives Flexible Drive

No. 208

A tension sleeve coupling made so that the flange attached to the drive shaft is readily removable now is being marketed. The removable half is made with an extended split hub on the driving flange, the hub being tapered on the outside and threaded over one-half its length, closest the flange. A collar, made to fit over the threaded hub, screws up to a tension fit, tightening the hub to the shaft, being further held in place by set screws, fitted over two sliding keys.

Drills and Bores Holes in Three Co-ordinates

No. 209

A foreign machine tool builder is marketing in this country a new type jig borer. The machine has three spindles, one boring vertically and two horizontally from opposite

directions. The horizontal spindle can be set at different heights through a range of 30 inches while the vertical spindle has a transverse motion of 28 inches.

Truck Trailer Provides Adequate Capacity

No. 210

A steel trailer with rubber tired wheels, complete bearing equipment and fitted with an automatic coupler has recently been placed in production. It has a diamond plate steel platform, 3 x 6 feet long, the top being 14 inches from the ground. Casters swivel on eighteen 1-inch steel balls. The rear tires are 12 x 4 inches and the caster tires 10 x 3 inches. It enables tractors to haul larger loads and longer trailer trains.

New Low Speed Motor Is Built by Welding

No. 211

A new low-speed synchronous motor with excitation materially reduced has been developed. A starting torque of 50 per cent and a pull in torque of 40 per cent are features. The shape of the rotor arms are such that a large amount of air is set in motion. The cooling air is directed against the stator laminations. By means of different weight rings bolted to the rotor rim six possible values of flywheel effect are available. The motor has wide applications.

Oil Tempering Bath Uses Electric Heat

No. 212

Rapid progress in commercial tempering of steels is indicated by the new equipment which is appearing constantly. A new compact, electrically-heated oil-tempering bath designed particularly for use with carbon steels has been built recently. It is claimed for this bath that it can be regulated within close temperature limits. It is provided with automatic control and is intended especially for use in tempering tools.

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207.	Die head	9/1
194.	Riveter, pneumatic	9/1
142.	Wrenches, steel	7/7
	Welding Equipment	
137.	Electrode holder	7/7
160.	Welder, arc	8/4
183.	Welder, arc tank	9/1
	Miscellaneous	
154.	Burner, pulverized coal	8/4
175.	Burnishing machine, gear	9/1
172.	Compensator	8/4
188.	Compressor, air	9/1
198.	Coupling, air hose	9/1
208.	Coupling, flexible	9/1
173.	Engines, diesel	9/1
141.	Feed pump, hydraulic	7/7
150.	Furnace, industrial	8/4
193.	Furnace bond tile	9/1
187.	Gear generator	9/1
170.	Hydraulic feed	8/4
186.	Leveler roller, sheet	9/1
163.	Lock nut	8/4
200.	Melting pot, electric	9/1
195.	Mill contactors	9/1
202.	Meters, electric	9/1
211.	Motor, electric	9/1
212.	Oil bath, electric	9/1
197.	Parallel rule attachment	9/1
138.	Sand mixer	7/7
169.	Solenoids	8/4
136.	Speed reducer	7/7
192.	Speed transmission, variable	9/1
167.	Starter for motor	8/4
156.	Switch, limit	8/4
168.	Transformer	8/4

The machine tool index for the first half of 1927 will be found on Page 1447 of the June 2 issue of IRON TRADE REVIEW.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

HEALD MACHINE CO., Worcester, Mass., has bought the grinding machine interests of the Giddings & Lewis Machine Tool Co., Fond du Lac, Wis. The purchase includes all the assets of the grinding machine division, including drawings, patterns, jigs, patent rights and good will. This purchase gives the purchasing company full patent protection on its types of machines. The Giddings & Lewis company will devote its entire resources to the manufacture of precision horizontal boring, drilling and milling machines. The Heald Machine Co. will transfer the manufacture of its new types of machines to its plant at Worcester, Mass.

* * *

GENERAL MOTORS CORP. has bought from the Blossom Lock Co., Cleveland, license to manufacture its ignition and transmission lock. Manufacturing operations will be transferred to the plant of the Delco-Remy Corp., Anderson, Ind.

* * *

HARRIS-SEYBOLD-POTTER CO., Cleveland, manufacturer of printing and lithographing machinery, has bought the J. F. Webendorfer Co., Mt. Vernon, N. Y., manufacturer of rotogravure machinery, and will move the business to its plant at Derby, Conn.

* * *

JOHN J. GREER & CO. INC., Ostend and Ridgely street, Baltimore, has completed its new warehouse. The company will move its stock of iron and steel into the new quarters within the next two weeks and hereafter will conduct its business at the new plant.

* * *

HUNTINGTON FACTORY FUND ASSOCIATION, Huntington, Ind., is disposing of $10,000 in preferred stock of the Lampman Tool Co., Angola, Ind., to finance removal of that company into its new plant at Huntington. The plant has been completed and production will start early in the fall.

* * *

UTILITOR CORP., manufacturer of small tractors, Indianapolis, has been reorganized and has taken over part of the plant of the Midwest Engine Co. Patents covering the tractor have been bought from the receiver for the Midwest Engine Co. The new company is headed by O. W. Armstrong, J. D. Hardesty and C. W. Carter, Seymour, Ind., and Ben R. Inman, Plainfield, Ind.

* * *

LANCASTER MALLEABLE & STEEL CORP., Lancaster, N. Y., has started operations in its new plant, replacing the one burned early in the year. At that time this plant was owned by the American Malleables Co. A new company was formed to rebuild the plant and now owns it. Full production will be attained in a short time. W. S. Gould is president, B. R. Weidle vice president, F. C. Johnson treasurer, and J. F. Patterson secretary.

* * *

ATLAS CONVEYOR CO., Philadelphia, recently organized, has opened offices at 20 South Fifteenth street. It will design and build elevators, conveyors, skip hoists, coal weighing larries, cable drag scrapers, ash hoppers, gates and similar equipment for handling and storing bulk materials. The company is headed by Percival K. Reed, L. G. Weygandt and F. A. Thumlert, formerly chief engineer, eastern sales manager and general manager, respectively, of the R. H. Beaumont Co.

* * *

GENERAL FIBER PRODUCTS INC., Indianapolis, has been incorporated as a step in the reorganization of the Rockwood Mfg. Co., manufacturer of pulleys and transmission mechanisms. It is planned for the new company to take over the Rockwood company's plant and continue under the same executives. Incorporators of the new company are George O. Rockwood, president of the Rockwood Mfg. Co., William M. Rockwood, secretary, William J. Hammerstadt, Indianapolis, and S. P. Browning and John M. Browning, Maysville, Ky.

* * *

BRECKENRIDGE MACHINE CO., Cleveland, builder of heavy machinery and jobbing work, has bought a new plant at 1071 East 222nd street, Cleveland. Equipment, all motor driven, numbering about 150 tools, will be moved to the new plant and supplemented by a number of larger tools. H. W. Breckenridge is president, A. G. Geck vice president and W. E. Barrow secretary and treasurer. These men have been engaged for nearly 25 years in building machine tools. The company has no product of its own, building entirely for others.

* * *

HAMILTON BY-PRODUCTS COKE OVENS, INC., Hamilton, Ont., has contracted with the Semet-Solvay Engineering Corp., New York, for the immediate construction of a complete plant for the manufacture of motor benzol. The corporation has in production at present equipment for purifying and scrubbing gas for the Dixie Construction Co., Hattiesburg, Miss., and a steel purifier for the Public Service Electric & Gas Co., Camden, N. J. It also is installing a de-emulsifier unit for the Queens Borough Gas & Electric Co., Far Rockaway, Long Island, N. Y.

AKRON BARROW CO., Cleveland, changes its name Sept. 1 to General Wheelbarrow Co. The company began business in 1840 at Akron, O., and in 1921 moved its plant to Cleveland, retaining the same name, and enlarging its line of products to include garden barrows, concrete carts, salamanders, steel mortar boxes, scrapers and industrial trucks. A number of important developments in the company's products are to be announced during the coming year. Expansion in distribution is being made constantly. No change in organization or personnel is to be made.

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450 Tons for Tags

The 1,225,000 pairs of 1928 automobile license plates which the Texas highway department is having manufactured at Los Angeles, will require approximately 450 tons of No. 26 gage sheets and two carloads of baking enamel. The plates are 5 x 14 inches. Production was started in July and 18,000 pairs per day will be made until the order is completed.

Exports of automotive products from Canada in the first half of 1927 totaled $18,704,623, compared with $19,734,610 in the corresponding period of 1926.

Wages High, Hours Reduced, Survey of Steel Industry Shows

IMPROVEMENT in working conditions in the various departments of the iron and steel industry are reflected in a survey just concluded by the bureau of labor statistics. In the ten departments covered by the bureau, combined, the average full-time hours per week decreased 18 per cent from 1913 to 1926; average full time weekly earnings increased 82 per cent, and average earnings per hour were 2⅛ times as much as in 1913. The accompanying table shows the average full-time hours per week for the various departments, and the general average for the industry. Earnings per hour and per week also are shown, with corresponding index figures.

In 1913 employes as a whole had an average full-time week of 66.1 hours, which decreased to 64.9 hours in 1914. In 1915 the average increased to 65.5 hours per week and decreased again in 1920 to 63.1 hours. There was scarcely any change in working time in 1922 as compared with 1920, but in 1924, following the general 1923 decrease in hours, employes worked but 55.2 hours per week regularly. The decrease continued in 1926 to 54.4 hours.

When the ten departments are considered separately, changes in hours in 1926 as compared with 1913 range from a 4 per cent increase in tin plate mills to a 26 per cent decrease in open-hearth furnaces and blooming mills. Average full-time hours per week decreased 22 per cent in blast furnaces, 25 per cent in bessemer converters, 20 per cent in plate mills, 22 per cent in standard rail mills, and 11 per cent in bar mills. In puddling mills, sheet mills, and tin-plate mills the shorter workday has been in force for many years and hours have been subject to only slight changes in recent years.

Employes in all departments combined earned an average of 30.1 cents per hour in 1913, which decreased to 29.7 cents in 1915. Earnings increased rapidly from 1915 to 1920, owing to war conditions, and employes earned on an average 74.5 cents per hour in the latter year. In 1922 the industry had not yet recovered from the 1921 industrial depression and employes earned but 51.3 cents per hour in that year.

Earnings recovered to a large extent in 1924 when average earnings

Steel Industry's Wages and Hours Averaged

	Averages			Index numbers (1913=100)*		
	Full-time hours per week	Earnings per hour	Full-time weekly earnings	Full-time hours per week	Earnings per hour	Full-time earnings per week
All Departments						
1913	66.1	$0.301	$18.89	100	100	100
1914	64.9	0.301	18.60	98	100	98
1915	65.5	0.297	18.65	99	99	99
1920	63.1	0.745	45.65	95	248	242
1922	63.2	0.513	31.67	96	170	168
1924	55.2	0.644	35.22	84	214	186
1926	54.4	0.637	34.41	82	212	182
Blast Furnaces						
1913	76.9	0.205	15.76	100	100	100
1914	74.8	0.206	15.41	97	100	98
1915	74.9	0.207	15.50	97	101	98
1920	72.1	0.571	41.17	94	279	261
1922	72.3	0.398	28.78	94	194	183
1924	59.7	0.520	31.04	78	254	197
1926	59.8	0.517	30.92	78	252	196
Bessemer Converters						
1913	70.0	0.284	19.88	100	100	100
1914	68.4	0.255	17.44	98	90	88
1915	68.7	0.264	18.14	98	93	91
1920	70.3	0.677	47.59	100	238	239
1922	68.7	0.470	32.29	98	165	162
1924	52.3	0.624	32.64	75	220	164
1926	52.6	0.641	33.72	75	226	170
Open-Hearth Furnaces						
1913	76.7	0.237	18.18	100	100	100
1914	74.5	0.237	17.66	97	100	97
1915	74.4	0.246	18.30	97	104	101
1920	68.7	0.671	46.10	90	283	254
1922	70.8	0.480	33.98	92	203	187
1924	58.0	0.635	36.83	76	268	203
1926	57.1	0.677	38.66	74	286	213
Puddling Mills						
1914	53.2	$0.328	$17.45	100	100	100
1915	52.2	0.315	16.44	98	96	94
1920	53.9	0.885	47.70	101	270	273
1922	52.1	0.496	25.84	98	151	148
1924	55.7	0.721	40.16	105	220	230
1926	52.1	0.657	34.23	98	200	196
Blooming Mills						
1913	73.0	0.265	19.35	100	100	100
1914	70.5	0.269	18.96	97	102	98
1915	71.0	0.268	19.03	97	101	98
1920	67.5	0.659	44.48	92	249	230
1922	68.0	0.472	32.10	93	178	166
1924	54.6	0.613	33.47	75	231	173
1926	54.2	0.627	33.98	74	237	176
Plate Mills						
1913	69.9	0.255	17.82	100	100	100
1914	69.0	0.258	17.80	99	101	100
1915	69.8	0.270	18.58	98	106	104
1920	68.8	0.671	46.16	98	263	259
1922	66.2	0.476	31.51	95	187	177
1924	57.2	0.562	32.15	82	220	180
1926	55.8	0.606	33.81	80	238	190
Bar Mills						
1913	61.5	0.288	17.71	100	100	100
1914	61.7	0.278	17.15	100	97	97
1915	61.4	0.266	16.33	100	92	92
1920	61.8	0.713	44.06	100	248	249
1922	61.2	0.486	29.74	100	169	168
1924	55.6	0.585	32.53	90	203	184
1926	54.7	0.591	32.33	89	205	183
Standard Rail Mills						
1913	70.9	0.254	18.01	100	100	100
1914	70.1	0.252	17.67	99	99	98
1915	70.9	0.246	17.44	100	97	97
1920	61.2	0.600	38.68	86	249	215
1922	61.5	0.470	28.91	87	185	161
1924	57.4	0.573	32.89	81	226	183
1926	55.5	0.595	33.02	78	234	183
Sheet Mills						
1913	52.3	0.483	25.26	100	100	100
1914	52.3	0.488	25.52	100	101	101
1915	52.5	0.450	23.63	100	93	93
1920	50.3	1.039	52.26	96	215	207
1922	51.1	0.694	35.46	98	144	140
1924	50.2	0.809	40.61	96	167	161
1926	48.9	0.759	37.12	93	157	147
Tin-Plate Mills						
1913	46.1	0.417	19.22	100	100	100
1914	46.0	0.425	19.55	100	102	102
1915	50.4	0.428	21.57	109	103	112
1920	50.6	0.949	48.02	110	228	250
1922	49.9	0.650	32.44	108	156	169
1924	48.8	0.795	38.80	106	191	202
1926	48.1	0.704	33.86	104	169	176

*Except puddling mills for which 1914=100.

per hour increased to 64.4 cents. In 1926 the average was 63.7 cents per hour.

Large increases are shown in 1926 over 1913 in all of the various departments. Only one department, however, open-hearth furnaces, shows higher earnings in 1926 than 1920. That department also shows a larger increase in earnings in 1920 and all later years as compared with 1913 than that recorded in any of the other nine departments.

In 1913, employes in open-hearth furnaces earned an average of 23.7 cents per hour, which increased to 67.1 cents in 1920, an increase of 183 per cent— that is, earnings were more than 2¾ times as high in 1920 as in 1913. In 1926 earnings in open-hearth furnaces were 67.7 cents per hour on the average, or 186 per cent greater than in 1913. The high earnings of 1926 are due largely to increases in production, as tonnage rates in 1924 and 1926 were practically the same. Employes in 1924, however, earned only 63.5 cents per hour.

Average hourly earnings of common laborers in the iron and steel industry as a whole in 1926 were 41.9 cents, in contrast with 50.8 cents at the peak in 1920 and 18.1 cents in 1914. The average for laborers at blast furnaces in 1926 was 38.9 cents; bessemer converters 44.3 cents; open-hearth furnaces 42.9 cents; puddling mills 35.7 cents; blooming mills 45.1 cents; plate mills 42.5 cents; standard rail mills 42.1 cents; bars mills 41.1 cents; sheet mills 47.5 cents and tin plate mills 42.9 cents.

The 1926 data were obtained by the bureau from 199 plants or departments of plants and covered 75,109 wage earners. According to the census of manufactures for 1925, the latest figures available, there was an average of 399,914 wage earners employed in all departments of the industry during that year. They were divided: 29,188 in blast furnaces and 370,726 in steelworks and rolling mills. These figures indicate that the bureau covered approximately 19 per cent of all employes in all departments and more than 50 per cent of the employes in blast furnaces alone.

Data for practically all establishments covered in the 1926 survey are for a period in January, which in most cases was the last half of the month. The figures for the years 1907 to 1915 are for the second half of May, those for 1917 are for a pay period in September, and those for 1919 are nearly all for a half-month pay period somewhere in the first three months of that year. The 1920 survey covered the last half of October, and in most instances the figures for 1922 relate to the first half of October. The last half of January was the period selected for 1924 and a large majority of the schedules cover that period.

Canadian output of steel castings last year was 24,917 long tons, against 33,338 tons in 1925.

Manchuria Is Preferring American Rails

In 1926 American iron and steel manufactures, particularly steel rails, made a most noteworthy showing in the Manchurian import trade, according to advices to the department of commerce from Consul S. Sokobin, Mukden, China. Of a total of 34,678 gross tons of rails imported into the part of Dairen, the report shows, 25,156 tons was of American origin, while 8500 tons was Jananese-made, and the remaining 726 tons was drawn from a variety of sources. In all 41,657 gross tons of rails was imported into Manchuria, including those listed above, or 82 per cent of all these imported into China. During the year the Chinese Eastern Railway imported 6957 tons of rails of Russian manufacture.

Colombia a Better Buyer

The unusual prosperity enjoyed by Colombia during the past five years has resulted in the steady employment of an increasing number of workmen, at improved wages, thus bringing about a larger per capita consumption of all classes of commodities. According to the industrial machinery division of the department of commerce, this has stimulated local production and has encouraged the establishment of new industries, as well as the enlargement of those already existing.

By-Product Coke Output Worth $250,000,000

FINAL statistics of the federal bureau of mines on by-product coke place the 1926 production at 44,376,586 net tons valued at $250,748,533. Of this total, 31,334,305 tons valued at $160,606,129 were used by the producer in blast furnaces. Seventy-eight by-product plants—49 at blast furnaces—were active on 1926 compared with 74 in 1925, of which 48 were at blast furnaces. The output of the furnace plants in 1926 was 36,702,890 tons, against 33,208,442 tons in 1925.

Production of by-products last year included 706,681,828 million cubic feet of gas, 1,167,859,453 pounds of sulphate of ammonia, 529,486,374 gallons of tar and 130,112,306 gallons of light oil and distillates. The value of all by-products sold was $134,469,769, exclusive of coke breeze. In the following table are given full details of the 1926 by-product coke production.

State	Produced		Used by producer in blast furnaces, etc.		Sold for furnace use				Sold for foundry use	
					To affiliated corporations		Merchant Sales			
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Alabama	4,779,986	$16,823,492	3,878,770	$12,553,675	27,840	$141,745	68,085	$308,242	446,433	$2,376,580
Colorado	592,939	(a)	574,075	(a)	.....	.....	.....	.....	.....	.....
Illinois	3,336,962	25,050,474	1,717,860	12,125,522	.....	.....	302,578	2,164,339	240,068	2,187,193
Indiana	5,990,344	44,143,059	5,293,817	39,188,968	4,185	29,297	19	147	250,665	2,204,272
Maryland	1,120,610	(a)	942,663	(a)	.....	.....	.....	.....	.....	.....
Massachusetts	573,748	(a)	14,795	(a)	43,572	(a)	.....	.....	192,467	(a)
Michigan	1,826,638	12,713,083	563,236	3,428,735	74	233	278,654	1,678,625	107,103	959,663
Minnesota	619,905	6,014,738	282,040	2,732,527	.....	.....	.....	.....	34,511	362,403
New Jersey	913,250	(a)	76,020	(a)	.....	.....	.....	.....	82,125	(a)
New York	2,827,805	17,455,226	1,196,574	5,845,404	563,767	2,862,955	92,186	597,016	105,581	956,335
Ohio	7,547,836	40,344,524	5,914,506	31,073,911	789,201	4,031,504	206,396	1,167,627	87,519	632,209
Pennsylvania	11,200,624	48,722,935	9,958,566	41,701,852	698,537	3,625,552	142,336	782,923	4,131	23,532
Tennessee	118,624	628,482	.....	.....	.....	.....	.....	.....	6,927	46,563
Utah	184,756	(a)	147,657	(a)	.....	.....	37,322	(a)	.....	.....
Washington	42,584	303,624	39,536	276,731	.....	.....	.....	.....	.....	.....
West Virginia	1,129,862	4,255,884	717,907	2,420,980	.....	.....	87,738	(a)	155,780	693,664
Ky., Mo., R. I. and Wis.	1,570,113	11,621,482	16,283	130,001	.....	.....	351,666	2,262,953	454,707	3,797,232
Undisbributed	.....	22,661,530	.....	9,127,823	.....	263,833	.....	838,427	.....	2,596,730
	44,376,586	250,748,533	31,334,305	160,606,129	2,127,176	10,955,119	1,566,980	9,800,299	2,168,017	16,836,376

(a)—Included under "Undistributed".

CONSTRUCTION *and* ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

BOSTON—A. M. Norton & Co. Inc. has been incorporated with $25,000 capital, 60 shares no par value to manufacture metal castings, machinery and tools, by Leland L. Gladwin, 121 Norton street, Weymouth, Mass.

BOSTON—Manton-Gaulin Mfg. Co., 11 Elkins street, maker of dairy machinery, has awarded the general contract for a 2-story plant to J. M. Swan & Co., St. Johnsbury, Vt.

BOSTON—Lewis Sovrensky Co. Inc. has been incorporated with $50,000 capital, to manufacture metals and metallic compounds, by William L. Sullivan, 15 Park Lane, Jamaica Plain, Mass.

HOLYOKE, MASS.—Worthington Pump & Machinery Co., 37 Appleton street, has work under way on its 1-story addition to the machine and erecting shops at its local plant. Casper Ranger Construction Co., 20 Bond street, has been awarded the general contract.

NEW BEDFORD, MASS.—Board of Works plans to build a 1-story municipal machine and repair shop. L. L. Brode, 888 Purchase street, is architect.

ELIZABETH, N. J.—Harco Steel Co. Inc. has been incorporated with $125,000 capital to engage in the brass foundry business by Harry Siegel, Elizabeth, attorney.

HOBOKEN, N. J.—International Machine Works has been incorporated with $100,000 capital by John J. Fallon Jr., attorney.

IRVINGTON, N. J.—Asher Mfg. Co., 212 Coit street, maker of laundry machinery, has awarded the general contract for a 1-story addition 60 x 175 feet to Enstice Bros., 111 Academy street, Newark, N. J. (Noted July 21).

JERSEY CITY, N. J.—American Protective Device Co. has been incorporated with $100,000 capital to manufacture safety devices by F. W. Hastings Jr., Jersey City, attorney.

NEWARK, N. J.—Schultz Machine Co. Inc. has been incorporated with $100,000 capital by F. D. Masucci, Newark, attorney.

NEWARK, N. J.—W. A. Birdsall & Co. 44 Mechanic street, will build a new 1-story branch storage and distributing plant for its plumbing and heating equipment and supplies on newly acquired property at Linden, N. J.

ALBANY, N. Y.—Superintendent of standards and purchases, executive department, will

Industrial Business Changes

REPUBLIC MOTOR TRUCK CO., Alma, Mich., has bought the entire capital stock of the Linn Mfg. Co., Morris, N. Y., manufacturer of tractors. Operation will be continued as a division of the purchasing company, without change of personnel.

* * *

Stieglitz-Treiber Co., 68 Thirty-third street, Brooklyn, manufacturer of metal products, has moved its plant to Borden avenue, Long Island City, N. Y. Production is to be increased.

* * *

Autovent Fan & Blower Co., Chicago, manufacturer of heating, ventilating and drying equipment, has occupied its new plant and office building at 1805 North Kostner avenue.

* * *

Cutler-Hammer Mfg. Co., Milwaukee, manufacturer of electrical equipment, has moved its branch office at Cleveland from the Guardian Trust building to 1905 Guarantee Title building, where three times the space is available.

* * *

Hacker Machinery & Supply Co., 847 Electric building, Houston, Tex., has changed its name to Hacker Machinery Co. It handles machine tools and shop and factory equipment.

* * *

Morrisey Foundry, 308 West Roberts street, Crookston, Minn., has been sold by F. H. Morrisey, its manager, to J. E. Lappen. Operation will be continued without change.

* * *

Washburn Mfg. Co., Worcester, Mass., has bought the plant of the Dean & Shery Co., Palmer, Mass. Equipment will be installed at once for the manufacture of baby carriages.

* * *

Metallic Sash-Operator Co., St. Louis, has moved into its new plant and office building at 4367 Duncan avenue. A machine tool and die shop will be operated in addition to its manufacturing business.

* * *

Harnischfeger Corp., Milwaukee, manufacturer of cranes and allied products, has opened a branch office at 524 Buder building, St. Louis. L. J. DeHoney, sales engineer, is in charge.

* * *

Scorchless Steam Pressing Iron Corp., 566 Seventh avenue, New York, has succeeded the Standard Steam Iron Corp. and will continue the manufacture of a high pressure steam heated iron for dyeing and garment trades.

* * *

General Laundry Machinery Corp., Fifty-third and Landsdowne avenues, Philadelphia, has absorbed the Willey-Ellis Co., Philadelphia, Chicago, Columbia, Pa., San Francisco, and the Tolhurst Machine Works, Troy, N. Y. Plants and names of the absorbed companies will be retained but operations will be controlled by the General Laundry Machinery Corp.

build a power house at the state hospital for treatment of tuberculosis, Raybrook, N. Y.

BROOKLYN, N. Y.—Swedish-American Steel Corp. has been incorporated with $20,000 capital by J. W. Smith, 41 Park Row, New York.

BROOKLYN, N. Y.—B. M. Nagy & Co. has been incorporated with $20,000 capital to manufacture metal dies, by M. Shapiro, 50 Court street, attorney.

BUFFALO—Washington Pump & Machinery Corp., Clinton and Roberts streets, contemplates building a new addition to its plant.

BUFFALO—General Drop Forge Co., 1738 Elmwood avenue, contemplates building a 1-story addition. Ernest McGeorge, 3030 Euclid avenue, Chicago, is architect and engineer.

NEW YORK—Automatic Hamburger Machine Co. has been incorporated with $10,000 capital by C. Finkelstein, 42 Broadway, attorney.

NEW YORK—Auduburn Metal Ceiling Co. has been incorporated with $20,000 capital by A. H. Goodman, 1482 Broadway, attorney.

NEW YORK—Surface Combustion Co., 366 Gerard avenue, maker of power equipment, etc., has purchased the former Towar textile mills, Toledo, O., and will remodel and equip for a new plant. The works will be given over primarily to the manufacture of ovens, gas burners and kindred products.

NEW YORK—Steel Casement Co. has been incorporated with $20,000 capital by J. M. Herzberg, 342 Madison avenue, attorney.

NEW YORK—Hubar-Hones Corp. has been incorporated with $150,000 capital to manufacture machinery by Nichols & Snevily, 117 Liberty street, attorney.

NEW YORK—Klimatic Clothes Dryer Corp. has been incorporated with $150,000 preferred and 5000 shares no par value, by Griggs, Baldwin & Baldwin, 27 Pint street, attorneys.

NEW YORK—Dobbins Machine Gun Corp. of New York has been incorporated with $150,000 preferred, 500 shares no par value to manufacture burglar alarms by J. O. Bender, 74 Trinity place, attorney.

ELLWOOD CITY, PA.—American Cotter Pin Co. plans to build a 1-story addition to its plant.

FRANKLIN, PA.—Chicago Pneumatic Tool Co. has awarded the general contract for its new machine shop and foundry to Hughes Foulkrod Co., Pittsburgh.

NEW CASTLE, PA.—Blair Strip Steel Co. has started work on its new 1-story plant, 50 x 250 feet.

OAKMONT, PA.—Edgewater Steel Co. plans to use part of a 28-acre site, recently acquired, for expansion.

PHILADELPHIA—General Electric Co., Witherspoon building, will build a 1-story addition 140 x 554 feet, on Elmwood avenue.

PHILADELPHIA—Samuel Yellin, sheet metal works operator, has awarded the general contract for a 2-story addition, 35 x 100 feet, to Haverstick & Borthwick, Schaff building.

PHILADELPHIA—Central Construction & Supply Co., 2222 Arch street, maker of refrigerating machinery and parts, will build a 3-story plant. Poggi & Winters, Equitable building, are architects.

PHILADELPHIA—John M. Melloy's Sons, 1419 Spring Garden street, maker of tinware and kindred metal products, has awarded the general contract for rebuilding the portion of its plant damaged by fire, to Robert Lamb Co., 843 North Nineteenth street.

PHILADELPHIA—Pennsylvania Railroad Co. contemplates building a new car repair shop at its Todds Cut repair works, Wilmington, Del., to handle electric rolling stock and

Resale Equipment News

PLANT and machinery of the New England Enameling Co., Middletown, Conn., will be sold at public auction Sept. 7 and 8 by the Industrial Plants Corp., auctioneer, New York. Land, buildings and equipment will be sold. The plant was engaged in the manufacture of hollow ware, tinware, galvanized, aluminum and enameled kitchen utensils and vending machines.

* * *

Scrap iron and metals and other materials will be sold at auction Sept. 6 at Fort Sheridan, Chicago, by the quartermaster at the fort.

* * *

Part of the land and buildings at Fort Morgan military reservation, near Mobile, Ala., will be sold by sealed bids Sept. 20. Included in the sale is a steel watertank of 150,000 gallons capacity. The sale is under direction of the quartermaster general of the war department, Washington.

* * *

Real estate, machinery and equipment of the Sheldon Axle & Spring Co., Wilkes-Barre, Pa., will be sold by the trustee in bankruptcy Sept. 19-22. Samuel T. Freeman & Co., Philadelphia, are auctioneers. The plant is on a tract of 14 acres with about 40 buildings, including foundry, machine shop, forge shop, pattern shop, power plant, office building and other structures. The equipment includes about 1000 machine tools of wellknown manufacturers, including more than 100 steam hammers; punch presses, hydraulic presses, upsetters, bulldozers, shears, foundry equipment, furnaces, tempering presses, generators, air compressors, accumulators, electro-plating plant, small tools, motors and supplies. A large supply of finished and unfinished product and parts also will be sold.

* * *

The bid of $60,000 for the properties of Kuebler Foundries Inc., Easton, Pa., has been rejected by the district referee in bankruptcy at Easton. The bid was submitted by Charles B. Brunner, of Easton, who represented local interests, and T. A. Mellon, trustee in bankruptcy for the company, has been instructed to report a new sales plan Sept. 2. Details of this plan will be arranged in the meantime with Samuel T. Freeman & Sons, Philadelphia, auctioneers.

* * *

Real estate, machinery and equipment of the Standard Malleable Castings Co., Terre Haute, Ind., will be sold at receiver's sale Sept. 13 and 14 at the plant, by Samuel T. Freeman & Co., auctioneers. The real estate includes about 7½ acres, with several manufacturing buildings. The equipment includes quick-change and engine lathes, grinders, drill presses, punch and arbor presses, radial drills, drop hammers, emery grinders, blowers, woodworking equipment, molding machines, core machines, rumblers, flasks, motors, transformers, compressors and supplies.

Sales Calendar

Sept. 2—Sales plan to be reported for disposition of properties of Kuebler Foundries Inc., Easton, Pa.

Sept. 6—Auction scrap metals at Fort Sheridan, Chicago

Sept. 7-8—Plant and machinery of New England Enameling Co., Middletown, Conn., by auction

Sept. 8—Bids for scrap metals at Fort Hayes, Columbus, O.

Sept. 13-14—Receiver's sale plant and equipment Standard Malleable Castings Co., Terre Haute, Ind.

Sept. 15—Sale of navy surplus and surveyed material, United States Ordnance plant, South Charleston, W. Va.

Sept. 19-22—Sale of plant and equipment of Sheldon Axle & Spring Co., Wilkes-Barre, Pa., by trustees.

Sept. 20—Bids for land and building at Fort Morgan, Mobile, Ala.

Sept. 22—Property, buildings and equipment Tipp Building & Mfg. Co., Tippecanoe, O., will be sold at auction.

Sept. 22—Auction of navy surplus and surveyed material, United States Navy yard, Washington.

Iron and Manganese Ores and Minerals

LAKE SUPERIOR ORES

Iron Ore

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, alongside docks, Atlantic ports

Spanish manganiferous ore, 54 per cent iron and 2 to 4 per cent manganese	10.25 to 10.50
North African low phosphorus	10.50 to 11.50
Swedish foundry or basic, 62 to 65 per cent	9.00 to 9.50
Spanish foundry or basic, 52 to 56 per cent	9.00 to 9.50
North African foundry and basic 50 to 56 per cent	9.00 to 9.50

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian	36 to 38 cents
Indian	36 to 38 cents
Caucasian, 53 to 55 per cent washed	38 to 40 cents

Fluorspar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$17.00 to 18.00
Washed gravel, imported duty paid eastern tidewater, per ton	16.00 to 16.50

equipment used on the Wilmington and Westchester branches.

PHILADELPHIA—Thomas Halton's Sons Inc., Mascher street, maker of textile machinery, plans to build a new plant on a site 155 x 500 feet.

PHILADELPHIA—General Electric Co., G. T. Baldwin, Sixty-eighth and Elmwood avenue, manager, has awarded the general contract for its 1 and 2-story manufacturing plant addition to U. G. I. Contracting Co., Broad and Arch streets.

PITTSBURGH—Hubbard & Co., maker of hardware products, plans to build a 1-story addition to its plant.

WARREN, PA.—Warren Electric Appliance Co. has been incorporated with $20,000 capital to manufacture electric heating appliances and elements, electric thermostats controls and specialties, by W. R. Eysinger, 118 East street, Warren, Pa., Emil Stransky and Eugene Hinkley.

WILKES-BARRE, PA.—Hazard Wire Rope Co. has been incorporated with $400,000 capital to manufacture wire, wire rope, screens and similar products by J. P. Murray, 4813 Springfield avenue, Philadelphia, R. V. Norris, Wilkes-Barre, Pa., and C. L. Thompson, Westport, Conn.

PAWTUCKET, R. I.—Fisk Rubber Co. will build an addition to its plant here.

PHILLIPSDALE, R. I.—American Electric Works plans to build two cable mill additions, each 80 x 100 feet, and a 1-story rod mill, 80 x 175 feet.

East Central

CHICAGO—Western Pipe & Steel Co., 4948 Bloomingdale avenue, contemplates building a new plant at Vermont street and Ogden avenue, Blue Island, Ill.

CHICAGO—E. Holt Co., 6826 South Chicago avenue, maker of automobile bumpers, has awarded the contract for its 1-story plant 150 x 150 feet.

CHICAGO—Water Tube Boiler & Tank Co., 7323 Woodlawn avenue, has been incorporated with $25,000 capital to manufacture machinery, tools and equipment of all kinds by Netherton & Netherton, Marquette building.

CHICAGO—Ideal Art Metal Co. Inc., 1700 West Thirteenth street, has been incorporated with $5000 capital to manufacture lamps, novelties and wrought iron furniture, by Isadore Isenberg, 127 North Dearborn street, correspondent.

CHICAGO—Republic Heater Co., 30 North LaSalle street, suite 428, has been incorporated with $18,000 capital to manufacture and assemble water heaters, castings, etc., by Edward J. Larney, 30 North LaSalle street, correspondent.

CHICAGO—Bear Tube & Pipe Co., 9 South Clinton street, has been incorporated with 100 shares no par value to manufacture and deal in iron and steel products, by Teller, Levit, Silvertrust & Levi, 127 North Dearborn street, correspondent.

CHICAGO—Koro Corp., 229 West Illinois street, formerly the Lincoln Steel Co., has acquired property in the terminal district in Waukegan, Ill., and plans to establish a new plant for the manufacture of welding equipment, electrodes, etc. It proposes to remove the Chicago works to the new location.

DECATUR, ILL.—Decatur Airways Inc., 313 West Main street, has been incorporated with $25,000 capital to manufacture airplanes and airplane parts by E. Lewis Campbell, 53 West Jackson boulevard, correspondent.

LAWRENCEVILLE, ILL.—Indian Refining Co., H. K. Harshbarger, chief engineer, will build a boiler house and contemplates building car remodeling shops.

MORRISON, ILL.—Morrison Implement Co., maker of agricultural implements, has awarded the general contract for a new 1-story plant to A. W. Badger, this city.

TUSCOLA, ILL.—Tuscola Motor Sales Co. Inc., 215 North Main street, has been incorporated with $15,000 capital to carry on a general machine shop business, by Green & Palmer, Flat Iron building, Urbana, Ill.

AUBURN, IND.—Auburn Automobile Co. has awarded the general contract for a 2-story addition to J. R. Muhn, this city.

BLOOMINGTON, IND.—H. & P. Electric Co. will build a 2-story plant.

GRIFFITH, IND.—Keen Foundry Co. will build a new 1-story foundry building.

BAY CITY, MICH.—Alert Pipe & Supply Co. has work under way on its new storage and distributing plant with pipe-threading, cutting and other facilities.

DETROIT—Richard Bros. Die Works, 1560 East Milwaukee street, will build an addition to the plant.

MUSKEGON, MICH.—Utilities Engineering Co. has started work on its new plant.

PORT HURON, MICH.—Holmes Foundry Co. plant three, was damaged by fire recently.

CANTON, O.—Central Alloy Steel Corp., makers of steel lath and other products, plans to rebuild its factory damaged by a recent fire, and has awarded the contract for construction.

CLEVELAND—Modern Mfg. Co., W. F. Bach, secretary, 4734 Hough avenue, maker of heaters, has awarded the contract for its 1 and 2-story plant, 120 x 165 feet.

CLEVELAND—Cleveland Punch & Shear Works, W. C. Sayle, vice president and general manager, 3917 St. Clair avenue, has awarded the general contract for its 1 and 3-story plant addition to Hecker Moon Co., 8701 Union avenue.

CLEVELAND—J. L. Hunting Construction Co. has been awarded the contracts for the factory addition, 100 x 107 feet for the Superior Screw & Bolt Co., Aetna road and East Ninety-third street, and for the 1-story addition to the Bronze Foundry & Machine Co., 4007 Detroit avenue.

DAYTON, O.—Miami Iron & Steel Co., 916 East Third street, plans to build a 1-story warehouse, 125 x 300 feet, at First, Findlay and Irwin streets. The building will house the company's offices and be used for the storage of steel.

ELYRIA, O.—Elyria Steel & Iron Co. has awarded the contract for its 1-story addition to H. K. Ferguson Co., Cleveland.

SHEBOYGAN, WIS.—Sheboygan Motor Co.,

Arthur Glatz, proprietor, is about to award contracts for a brick and steel automobile sales and service building, costing about $40,000 complete, at 1215 North Ninth street.

ROSHOLT, WIS.—Anderson Bros. will build a garage and repair shop, 60 x 100 feet, according to plans by Architects Smith & Brandt, Appleton and Manitowoc, Wis.

SOUTH MILWAUKEE, WIS.—Board of education has been authorized by the common council to secure plans and proceed with the erection and equipment of a junior high school costing $200,000. Contracts are to be let in November. H. H. Daehling is secretary of the board.

SPOONER, WIS.—The common council is taking steps with a view of building and equipping a hydroelectric generating plant on the Yellow river, six miles below the present plant. The output is to be used both for municipal and industrial and domestic uses. George B. Sage is city clerk.

WAUMATOSA, WIS.—Council authorized building the first unit of the senior-junior high school, to contain manual training and domestic science departments.

WAUWATOSA WIS.—(Milwaukee P. O.)—Common council has voted an additional appropriation of $100,000 to make a fund of $250,000 available for the immediate construction of a senior-junior high school, with manual training shops. etc. Plans are being completed by Architects Herbst & Kuenzli, 130 Wisconsin avenue, Milwaukee. W. L. Smithyman is chairman of the board of education.

West Central

CEDAR RAPIDS, IOWA—Universal Crusher Co., 625 Avenue C west, maker of crushers, pulverizers, screens, etc., plans to build a 1-story addition, 40 x 100 feet. Norman Hatton, O. R. C. building, this city, is architect.

ST. PAUL.—Bids will soon be taken by the water and light department for a 110-foot tower and a 200,000-gallon steel water tank. G. M. Shepard is city engineer.

POPLAR BLUFF, MO.—Holcomb Foundry & Machine Works will start building its new 2-story foundry and machine shop, 60 x 80 feet, with a 1-story addition, 30 x 40 feet, for which the general contract has been let to the Monolith Builders Co., Kansas City, Mo.

ST. LOUIS—Carter Carburetor Corp., 2840 North Spring street, plans to build a 2-story plant, 30 x 45 feet.

ST. LOUIS—Utility Tool Co., 620 Tower Grove avenue, plans to install additional equipment, including a 30-inch lathe, 18 feet between centers.

ST. LOUIS—Automotive Machine Shop, 4973 Easton avenue, has been established by Morris E. Craig, general manager, to rebuild automotive engine and do a general grinding business.

ST. LOUIS—Vacuum Cotton Harvester Inc., Central Station, has been organized to manufacture a special vacuum cotton harvester for use in connection with the Fordson tractor. Sites are being considered for a new factory to replace the former one, recently destroyed by fire.

ST. LOUIS—Commercial Foundry Co., 7823 Alabama street, has awarded the general contract for a 1-story foundry 105 x 125 feet, to Stupp Bros., Syndicate Trust building.

ST. LOUIS—Messemer Mfg. Co., 2700 South Seventh street, has awarded the general contract for a 2-story brass factory addition to George Moeller, 3520 Itaska street. (Noted July 21)

ST. LOUIS—Contracts have been awarded for the double tracks to be laid over the Pennsylvania railway system between St. Louis and Indianapolis. Work has started on installation of automatic train control devices.

LOUISVILLE, NEBR.—Ashgrove Cement Co. has started work on new cement plant to cost $2,000,000.

LEHIGH, N. DAK.—Lehigh Briquetting Co. will soon receive bids for the construction of a complete briquetting and power plant to cost $700,000. Project includes a deep well, a 500-gallon per minute pumping plant, 600-horsepower power plant, sewage disposal plant, steel water tower and tank, 300-ton coal bunker, coal crushing plant, screening plant, narrow-gage railroad and complete equipment. Ralph W. Richardson, 301 Zenith building, St. Paul, is engineer.

Southern States

PINE BLUFF, ARK.—Seaman-Dunning Corp., West Fourth street, maker of automobile bodies, has awarded the general contract for an addition 200 x 215 feet, to E. Charles Royse Co., Citizens National Bank building.

COVINGTON, KY.—Moeschl-Edwards Corrugating Co., maker of corrugated metal culverts and other corrugated iron products, plans to build a 1-story plant. B. T. Wisenall, Covington, is architect.

GREENVILLE, S. C.—Greenville Spindle & Flyer Co., Edward C. Andrews, manager, contemplates rebuilding its textile mill machinery plant recently damaged by fire.

CHATTANOOGA, TENN.—Southern Brass Co. has been incorporated with $51,000 capital by Paul Campbell, H. J. Weeks and J. A. Sherrill.

KINGSPORT, TENN.—Kingsport Foundries Inc., recently incorporated, has acquired new property and plans to build a 1-story foundry and machine shop.

DALLAS, TEX.—Mosher Steel & Machinery Co., W. S. Mosher, president, plans to build a machine, pattern and blacksmith shop on new property.

LUBBOCK, TEX.—Texas Technichological college plans an engineering building. W. C. Hedriek, First National Bank building, Fort Worth, is architect.

SAN ANGELO, TEX.—Gulf & West Texas railroad, W. R. Morrison, president, plans to build a railroad from San Angelo to Corpus Christi.

SAN ANTONIO, TEX.—C. H. Mountjoy Co., distributor of automotive parts, is installing machine shop for gear cutting, regrinding, etc. J. A. Wood is shop superintendent.

WICHITA FALLS, TEX.—Riverside Boiler & Welding Works announces removal of its Gainesville, Tex. shop to Meunster, Tex., where new oil field was recently opened.

WICHITA FALLS, TEX.—Taylor Wheel & Body Works plans an addition 50 x 150 feet to its shop for rebuilding of truck bodies and wheels.

WICHITA FALLS, TEX.—Wilson Mfg. Co., manufacturerer of oil field specialties, has added new machinery for gear and sprocket work. An arc welded steel frame office building, 28 x 28 feet, and corrugated iron warehouse, 32 x 64 feet are under construction.

Western States

ALHAMBRA, CALIF.—Reliance Mfg. Co., Pasadena, Calif., has awarded the contract for its 1-story foundry 115 x 180 feet, and its 1-story machine shop, 60 x 280 feet.

PACIFIC GROVE, CALIF.—American Can Co., Hunter-Dulin building, San Francisco, will build a 1 and 2-story factory and warehouse here.

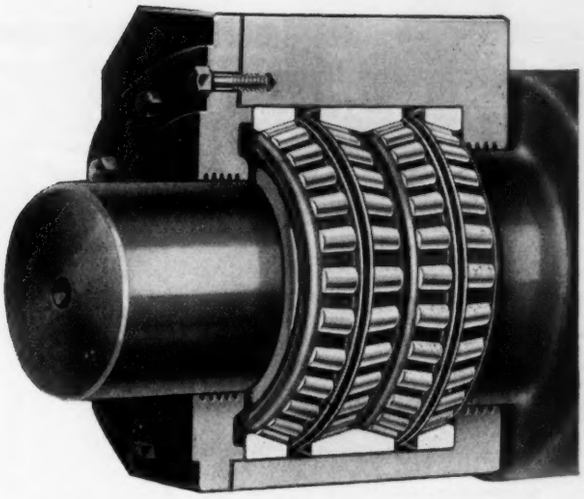
SAN FRANCISCO—Pacific Can Co., 290 Division street, will build a plant at Newhall street and Williams avenue.

PUEBLO, COLO.—Colorado Fuel & Iron Co., E. H. Weitzel, general manager, plans to build a foundry in Minnequa, Colo.

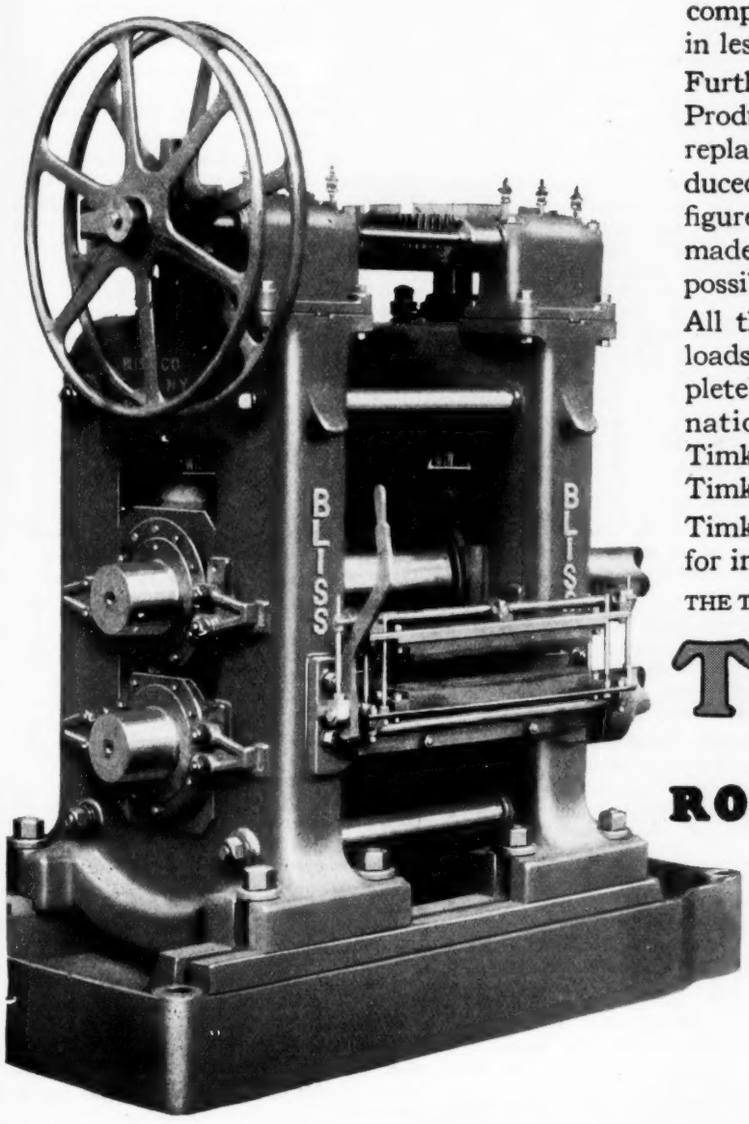
PORTLAND, OREG.—Electric Steel Foundry, 475 North Twenty-fourth street, will build a storage building, shop and craneway.

SEATTLE—Doran Brass Foundry Co., 75

(*Concluded on Page* 560)



50% less Power Cost —Many times the endurance



So tremendous are the savings effected by Timken Bearings in rollnecks that it is economical to replace obsolescent equipment at once with Timken-equipped mills.

The several Timken-equipped mills now in service prove that power saving alone often completely pays for a Timken installation in less than a year.

Furthermore, Timkens have the *endurance.* Production is not interrupted for bearing replacements. Maintenance costs are reduced to only a small fraction of the previous figure. Continuous capacity runs are being made that have never before been thought possible.

All the awesome radial, thrust and shock loads of rolling operations have been completely conquered by the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken Electric Steel.

Timken steel mill engineers are available for immediate and thorough discussion.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN
Tapered
ROLLER BEARINGS

Bliss Finishing Mill with
Timken-Equipped Rollnecks

See Timken—SPACE 122

NATIONAL MACHINE TOOL
BUILDERS' EXPOSITION

Cleveland, September 19-23

Construction and Enterprise

(*Concluded from Page* 558)

Horton street, plans to build a 1-story addition.

Business in Canada

NEW WESTMINSTER, B. C.—The B. C. Gypsum Co. will build addition to its plant on the Fraser river at a cost of $50,000 exclusive of machinery. Building will be 200 feet long of corrugated iron construction.

VANCOUVER, B. C.—Arthur Bennett, marine architect and engineer, has been commissioned to draw plans and specifications for a steel fireboat.

WINNIPEG, MAN.—The Thorkelson Box Co., Spruce street, has started work on a factory here. Woodworking machinery will be purchased.

CHATHAM, ONT.—Chatham Malleable Steel Co., 178 Inches avenue, has let the masonry contract for an addition to its plant to F. Milburn, 70 Fielder avenue. Other contracts to be let later.

GUELPH, ONT.—Secretary J. J. Heeg, of the Light & Heat Commission, was authorized to secure plans and specifications for two sub-stations on Bristol street and on Yorkshire street. The commission will also purchase two transformers of 1000 horsepower each.

HAMILTON, ONT.—The following contracts have been awarded in connection with coke plant to be erected here at a cost of $400,000 for the Hamilton By-Products Coke Ovens, 13-15 Mail street west: General contractor Semet-Solvay Engineering Co., 40 Rector street, New York; structural steel, Burlington Steel Co. Ltd., Sherman avenue north, Hamilton; construction of 3 light oil scrubbers. Tope Construction Co., 218 Carlton avenue west, Hamilton. The project includes the following: (1) Benzol recovery building, 1 story, 32 x 40 feet; (2) washer building, 15 x 20 feet; (3) pump room, 15 x 10 feet; (4) pump room, 15 x 30 feet; (5) 3 light oil scrubbers, 8 feet diameter and 77 feet high; (6) 8 or 10 storage tanks, 9 feet deep, 8 feet wide and 30 feet long. All buildings to be one-story, concrete, brick and steel construction.

KIRKLAND LAKE, ONT.—Kirkland Premier Mines Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals, with $3,000,000 stock by John E. Grivell, Howard K. Hawthorne, Helena Peers and others.

KITCHENER, ONT.—Bernhard H. Prack, architect, 42 James street north, Hamilton, Ont., is receiving bulk tenders for addition to factory here for the Canadian Goodrich Co., Ltd., 521 King street west, estimated to cost $150,000. The building to be 3 stories, 100 x 132 feet, steel and brick construction.

OSHAWA, ONT.—Gordon Lefebvre, general manager of General Motors of Canada Ltd., announces the award of the following contracts for additions to the local plant. Extension to body plant, No. 33, W. J. Trick Co., Oshawa; extension to paint shop, Gay Co. Ltd., Oshawa; one-story addition to Master Six body plant, building No. 55, Anglin-Norcross, Ltd., Temple Bldg., Toronto.

OTTAWA, ONT.—Fraser Brace Engineering Co. will start work soon on the fourth great Gatineau Power Co. development plant and dam on the Gatineau river at Nigger rapids, a short distance from here. The plant will be constructed along similar lines to the one at Farmer's rapids, and the initial installation will be for the development of 120,000 horsepower. The plant will take a year to build.

PORT DOVER, ONT.—Port Dover Dry Docks Co. Ltd. has been incorporated, with $40,000 capital by Carl F. Kolbe, James N. Schilz and Albert J. Schubert.

SANDWICH, ONT.—Canada Salt Co. will start work immediately on addition to factory here.

SARNIA, ONT.—Sarnia Bridge Co. Ltd., 251 Campbell street, will spend $8000 on repairs and improvements to plant following recent fire.

SARNIA, ONT.—Fire originating in the paint department of the Sarnia Bridge Co., July 26, damaged the main plant. The owners will make repairs immediately.

SARNIA, ONT.—Preliminary surveys with the view to the construction of an international bridge between Sarnia and Port Huron have been begun under the direction of C. M. Greer engineer of the Harrington, Howard & Ash Co.

SCARBOUROUGH BLUFFS, ONT.—Felstone Products Co., Toronto, Ont., has purchased a site here and proposes to start work at once on a new factory.

Refractories

FIRE CLAY BRICK
Per 1000 f.o.b. works

First Quality	
Pennsylvania	$43.00 to 46.00
Ohio	43.00 to 46.00
Illinois	43.00 to 46.00
Kentucky	43.00 to 46.00
Missouri	43.00 to 46.00
Maryland	43.00 to 46.00
Georgia and Alabama	40.00 to 45.00
Second Quality	
Pennsylvania	35.00 to 38.00
Ohio	35.00 to 38.00
Illinois	35.00 to 38.00
Kentucky	35.00 to 38.00
Missouri	35.00 to 38.00
Maryland	35.00 to 38.00
Gerogia and Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Joliet, Ill., and East Chicago, Ind.	52.00
Birmingham	51.00

MAGNESITE BRICK
Per Net Ton

9 x 4½ x 2½	65.00

MAGNESITE

Per Net Ton Chester, Pa., and Baltimore base	
Dead-burned grain magnesite	40.00

CHROME BRICK

Per Net Ton Chester, Pa., and Baltimore base	
9 x 4½ x 2½	45.00

New Trade Publications

TOOLS—Oswego Tool Co., Oswego, N. Y., has issued a catalog of its tools for boilermakers, machinists and pipe workers. Data and illustrations are presented.

ARC WELDING—Wilson Welder & Metals Co., Hoboken, N. J., is distributing a leafict on the subject of economy in arc welding practice. Proper current for perfect results and regulation of temperature are discussed.

RECORDING AMMETERS—The Bristol Co., Waterbury, Conn., has issued a catalog of its recording ammeters. Methods of recording are described. Details of construction, installation and operation are presented.

RAILWAY MATERIALS—Steel, Peech & Tozer Ltd., Sheffield, England, has issued a booklet covering its railway supplies, with views of its plants, interiors of departments and many of its products.

WELDED ROOF TRUSSES—Linde Air Products Co., New York, has prepared a study of inset plate joints in roof trusses. It is a report of the design, development, fabrication and testing of a series of welded roof trusses. It is the beginning of a program by this company looking to the practical utilization of its process in the fabrication of structural steel. Ample engineering data and diagrams illustrate the text.

VENTILATING FANS—Fans for providing fresh air in working spaces are described in a catalog by the Buffalo Forge Co., Buffalo. Details of construction are shown and a wide variety of applications is suggested.

SPRING-MAKING MACHINERY—Sleeper & Hartley Inc., Worcester, Mass., has issued a catalog of its machines for production of springs of various types. Bulletins covering various phases of spring manufacture are offered.

ELECTRIC RIVET HEATERS—American Car & Foundry Co., New York, has prepared a bulletin covering the advantages in the use of its electric heater for preparing rivets for use. It is illustrated and engineering data are given.

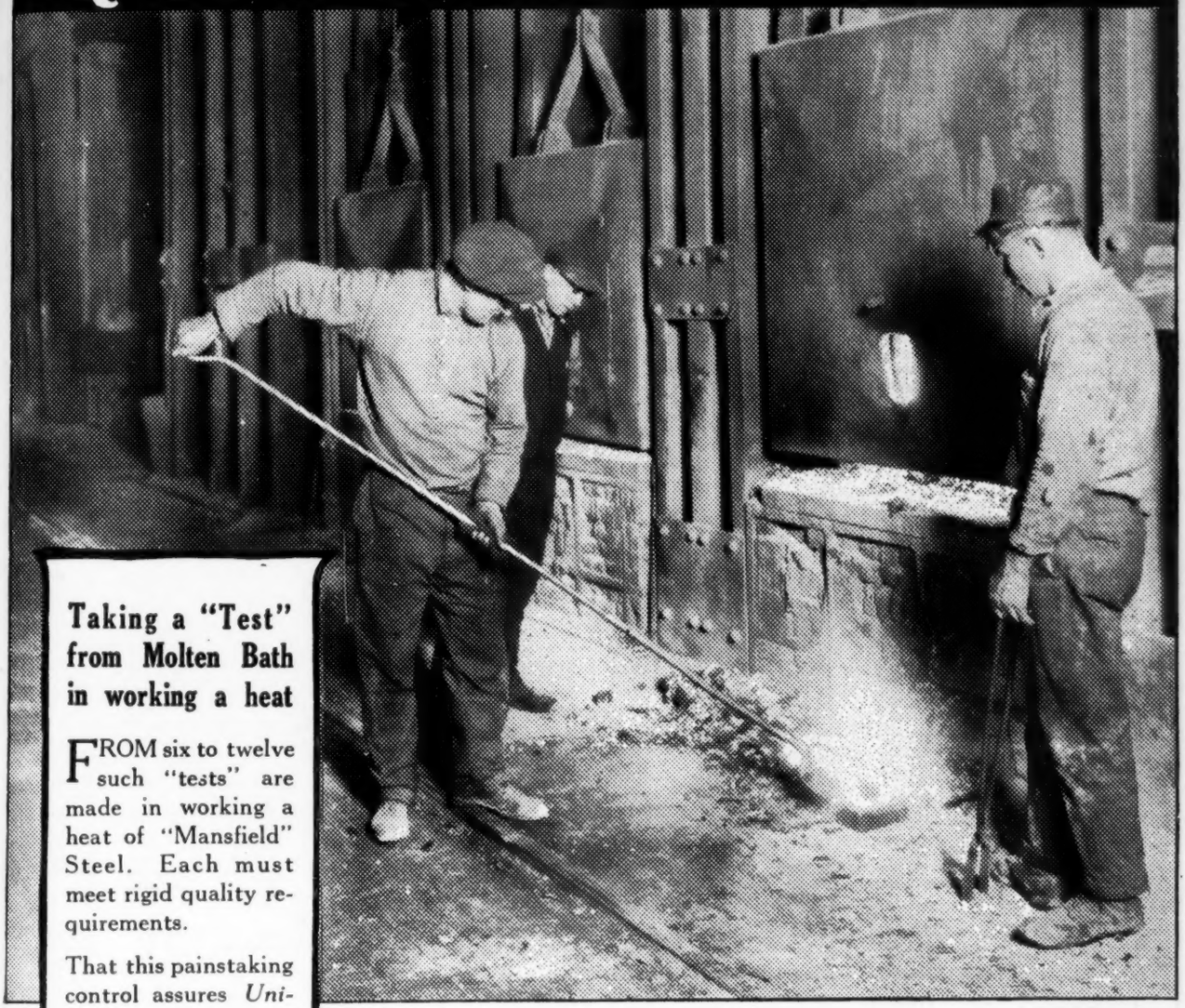
INSULATING BRICK—Heat insulation in the iron and steel plant is the theme of a bulletin by the Celite Products Co., New York. Insulating brick for conserving heat in coke ovens, boilers, hot blast stoves, mains and stacks, producer gas flues, open-hearth regenerators and flues, soaking pits and all types of reheating furnaces is a product of this company. The bulletin illustrates their application in a wide range of uses.

POWER PLANT—A reprint of a description of a large auxiliary steam plant is being distributed by the Combustion Engineering Corp., New York. The plant is featured by pulverized fuel, high-pressure steam, superheat, air preheating and stage heating.

SPEED REDUCERS—Herringbone speed reducers manufactured by the Link-Belt Co., Chicago, are described in a book recently issued by this company. Three standard units have been developed to cover a wide range of ratio and capacities. Construction and lubrication are described and illustrated.

FUSION WELDING—Fusion Welding Corp., Chicago, has issued a booklet under the title of "Redesign Engineering." Its contents sketch the possibilities of utilizing steel by welding to replace more costly castings. Change in design to accomplish this is a service furnished by this company. Welding and cutting equipment is described in detail.

MANSFIELD QUALITY SHEETS



Taking a "Test" from Molten Bath in working a heat

FROM six to twelve such "tests" are made in working a heat of "Mansfield" Steel. Each must meet rigid quality requirements.

That this painstaking control assures *Uniform Quality* is apparent by the fine service which Mansfield Sheets render in a large number of manufactured products.

Specify MANSFIELD Automobile Sheets, Metal Furniture Sheets, "Wabik metal" Sheets for Vitreous Enameling, Milk Can Stock, Pickled and Annealed Annealing Stock for Kitchen Utensils. *Sheet Bars and Ingots.*

MASTER TEC BRAND

Mansfield Sheet & Tin Plate Company
Mansfield, Ohio

District Sales Offices:
12-237 General Motors Bldg., Detroit, Mich.
851-855 Book Bldg., Detroit, Mich.
410 Pierce Bldg., St. Louis, Mo.
1106 National City Bldg., New York, N. Y.
2002 Union Trust Bldg., Cleveland, Ohio
1504 West Venango Street, Philadelphia, Pa.

Contributing Member
SHEET STEEL TRADE EXTENSION COMMITTEE

District Sales Offices:
1412 Merchants Bank Bldg., Indianapolis, Ind.
1020 Union Trust Bldg., Cincinnati, Ohio
640 Endicott Bldg., St. Paul, Minn.
237 Rialto Bldg, San Francisco, Calif.
509 Wilcox Bldg., Los Angeles, Calif.
1426 L. C. Smith Bldg., Seattle, Wash.

European Iron and Steel Statistics

Gross Tons

Pig Iron Production

Monthly Average	United Kingdom	France	Belgium	Luxemburg	Germany*
1912	729,000	405,000	192,000	184,800	1,279,200
1913	855,000	427,200	203,800	209,000	1,374,400
1919	617,000	198,000	20,600	50,000	463,700
1920	669,500	281,700	91,500	56,800	577,500
1921	218,000	280,300	71,800	79,600	643,200
1922	408,500	428,900	132,300	138,200	770,500
1923	620,000	445,600	179,100	115,400	404,700
1924	609,000	631,100	230,300	177,000	640,500
1925	521,800	696,800	208,500	192,300	834,500
1926	203,500	770,500	278,800	206,100	791,000
1926					
January	533,500	750,900	135,600	200,500	678,700
February	502,000	695,500	199,200	182,200	621,500
March	568,500	760,300	276,900	209,400	705,500
April	539,100	755,800	283,400	193,600	657,800
May	88,800	770,400	294,900	191,900	724,700
June	41,800	765,800	290,100	207,900	708,800
July	17,900	779,200	301,800	208,000	755,900
August	13,600	800,800	313,400	206,300	836,900
September	12,500	772,800	308,000	211,600	866,300
October	13,100	802,900	314,600	219,400	920,700
November	12,700	777,300	304,700	214,000	967,900
December	98,000	814,400	323,400	228,700	1,048,100
1927					
January	434,600	792,400	311,500	224,100	1,043,200
February	571,100	705,100	288,000	204,500	951,800
March	671,800	788,500	309,400	226,200	1,068,900
April	680,000	761,800	305,100	221,000	1,035,400
May	720,100	781,800	314,000	233,900	1,112,100
June	651,300	735,000	297,300	220,300	1,050,900

Ingots and Castings Production

Monthly Average	United Kingdom	France	Belgium	Luxemburg	Germany*
1912	566,000	363,000	206,000	79,400	1,339,600
1913	638,600	384,500	202,300	109,000	1,445,700
1919	658,000	179,000	27,400	32,000	563,900
1920	755,600	250,200	102,800	46,700	760,800
1921	308,600	254,500	62,800	61,900	819,700
1922	490,100	372,000	128,400	114,300	960,500
1923	706,800	419,100	186,200	98,300	517,000
1924	685,100	566,000	234,700	154,300	806,500
1925	615,500	608,300	197,700	170,800	1,000,000
1926	296,700	687,900	276,800	184,100	1,012,500
1926					
January	640,400	650,200	129,100	171,200	778,600
February	703,800	620,500	180,400	167,800	803,200
March	784,100	714,300	276,500	192,700	935,000
April	661,000	672,600	282,500	177,700	855,000
May	45,700	656,700	280,300	167,100	885,700
June	34,500	682,900	306,400	187,400	962,000
July	32,100	706,900	305,900	188,500	1,003,400
August	52,100	693,400	312,900	181,400	1,124,900
September	95,700	695,100	307,600	186,200	1,126,300
October	94,200	730,200	311,800	192,200	1,155,900
November	97,500	702,900	305,100	191,100	1,237,400
December	319,300	729,500	322,600	205,400	1,282,800
1927					
January	730,700	662,900	315,700	192,300	1,288,000
February	826,800	618,200	292,200	181,300	1,213,800
March	949,600	692,900	309,700	199,800	1,382,900
April	850,100	669,900	296,400	202,800	1,268,300
May	884,600	700,800	316,100	206,900	1,356,800
June	747,300	661,400	295,100	200,000	.....

*German pre-war boundaries for 1912 and 1913; from 1919 the figures do not include the Sarre district returns.

Imports

	United Kingdom	Belgium and‡ France	Luxemburg	Germany*
Average monthly 1912	166,400	16,400	87,000	27,300
Average monthly 1913	185,900	14,100	72,900	25,000
Average monthly 1919	42,400	113,100	44,400	38,600
Average monthly 1920	92,400	90,800	70,000	26,200
Average monthly 1921	136,700	41,300	43,300	54,000
Average monthly 1922	73,500	63,300	47,700	152,300
Average monthly 1923	110,200	58,500	43,700	145,000
Average monthly 1924	202,400	57,100	46,800	160,000
Average monthly 1925	226,700	14,100	44,500	98,400
Average monthly 1926	311,700	14,200	50,200	86,500
1926				
January	221,700	9,400	44,100	61,500
February	228,500	11,700	42,400	62,300
March	258,500	18,400	58,800	62,900
April	261,800	20,000	49,600	77,100
May	166,600	19,900	44,700	80,800
June	233,400	17,700	60,200	92,600
July	270,900	15,500	46,400	84,400
August	315,100	15,500	43,800	84,300
September	445,700	13,800	59,800	94,800
October	398,200	13,800	42,800	101,400
November	422,700	9,400	52,600	109,900
December	517,100	4,800	57,500	126,100
1927				
January	555,500	7,900	45,800	129,500
February	443,400	10,100	36,800	143,400
March	478,100	10,500	54,000	129,800
April	404,700	12,000	47,300	200,000
May	355,900	15,100	47,500	186,400
June	332,600	.....	.....	.....

*Luxemburg is included with Germany in 1912 and 1913.

Exports

	United Kingdom	Belgium and‡ France	Luxemburg	Germany*
Average monthly 1912	400,600	41,500	124,500	482,400
Average monthly 1913	414,100	51,600	129,200	517,300
Average monthly 1919	186,100	19,400	14,500	10,300
Average monthly 1920	270,900	77,400	76,700	143,600
Average monthly 1921	141,400	133,800	75,600	160,000
Average monthly 1922	283,400	161,400	175,900	209,700
Average monthly 1923	360,000	181,900	207,900	110,000
Average monthly 1924	321,100	231,100	282,200	130,000
Average monthly 1925	310,900	321,700	262,800	267,600
Average monthly 1926	249,000	343,800	308,900	402,000
1926				
January	336,700	345,200	188,200	347,300
February	339,500	353,000	247,300	338,600
March	406,500	355,700	259,700	415,200
April	313,000	350,000	276,000	402,000
May	273,700	323,100	199,700	357,500
June	231,300	297,600	262,700	375,100
July	243,900	306,100	229,200	428,900
August	163,700	323,600	406,000	423,800
September	160,200	316,000	310,000	418,500
October	194,100	321,600	438,700	464,800
November	166,400	419,300	427,100	430,000
December	158,700	413,800	470,600	422,300
1927				
January	219,400	463,300	345,900	478,400
February	251,700	480,600	364,500	352,900
March	353,000	472,700	415,000	374,100
April	334,500	519,100	383,800	344,300
May	422,400	461,900	364,800	344,300
June	366,100	.....	.....	.....

‡Luxemburg included with Belgium from 1922 onward.

American Iron and Steel Exports, Imports

Gross Tons

	Imports	Exports
1927		
January	63,452	215,235
February	49,460	166,128
March	61,672	171,094
April	60,374	192,339
May	79,814	202,708
June	69,017	184,364
1926		
January	79,067	174,585
February	100,213	157,187
March	93,107	169,438
April	107,636	194,449
May	108,731	173,418
June	124,215	159,506
July	82,411	194,717
August	91,578	171,588
September	85,484	182,071
October	81,830	172,070
November	81,259	219,830
December	75,559	198,189
Total	1,111,090	2,167,048
1925		
January	77,065	141,714
February	92,380	102,302
March	92,110	155,386
April	71,249	155,426
May	68,117	150,612
June	83,330	136,847
July	64,642	138,670
August	68,489	188,963
September	68,445	136,754
October	80,163	141,817
November	79,771	171,134
December	98,400	142,209
Total	943,240	1,762,571
1924		
December	69,281	129,376
November	34,300	124,464
October	40,877	158,553
September	45,216	135,894
August	44,928	136,025
July	30,410	138,845
June	60,474	172,982
May	66,805	168,172
April	50,975	132,739
March	39,279	124,762
February	42,054	168,191
January	26,677	251,284
Total	556,281	1,805,064

Yearly Totals		
1923	734,734	2,009,141
1922	712,895	2,005,100
1921	135,825	2,150,276
1920	421,274	4,934,087
1919	322,264	4,397,295
1918	169,110	5,338,019
1917	330,301	6,465,053
1916	328,965	6,110,732
1915	282,396	3,532,564
1914	289,775	1,549,554
1913	317,260	2,745,635
1912	225,072	2,947,596
1911	262,457	2,187,725
1910	510,730	1,537,943
1909	363,984	1,243,583
1908	205,845	964,242
1907	662,358	1,301,981
1906	577,809	1,325,740
1905	416,000	1,011,255
1904	266,398	1,167,674
1903	1,178,797	326,590
1902	1,212,484	1,103,664
1901	221,297	700,852
1900	209,955	1,154,284

A. Marx & Sons
INCORPORATED
IRON AND METAL SCRAP
RAILWAY AND RAILROAD EQUIPMENT
MACHINERY OF EVERY DESCRIPTION
1645 TCHOUPITOULAS STREET
P. O. BOX 889
NEW ORLEANS, LA. February 9, 1927

IM-EW

The Brown Hoisting Machinery Co.,
Whitney-Central Bldg.,
New Orleans, La.

Gentlemen:-

Attention Mr. C. H. White, Mgr. Southern Office.

We are in receipt of your letter of the 8th. We can only say that the results of the visit of your Mr. Cave from your Service Department in inspecting our Brown Hoist is characteristic of both the wonderful material in the Brown Hoist, as well as the service we have received from it, and if we knew of anyone who anticipated purchasing a Locomotive Crane, we would cheerfully recommend your Machine.

Thanking you for the courtesy extended, and with best wishes, we beg to remain,

Yours very truly,
A. MARX & SONS, INC.
BY J. Marx

SPECIALTIES
AIR COMPRESSORS
HOISTING ENGINES
LOCOMOTIVE CRANES
CONCRETE MIXERS AND SUPPLIES
ELECTRICAL EQUIPMENT
CONCRETE BARS
STRUCTURAL MATERIALS

List of Products

Cranes on R. R. Trucks and Creepers, 5 to 40 tons capacity, powered by Gas, Steam or Electricity. ½-yd. Gas Shovel-Crane, Clamshell Buckets, Link-type Buckets, Belt and Chain Conveyors, Bridge Cranes, etc.

Low cost handling that is dependable—that is really what you want on your work and what Marx & Sons wanted, and have got, on theirs. You can have just as dependable a worker because Brownhoists are built in types and sizes to suit every kind of handling job.

The Brown Hoisting Machinery Co., *Cleveland, O.*

Branch Offices: New York, Chicago, Pittsburgh, New Orleans, San Francisco, St. Louis.

BROWNHOIST

GOOD MATERIAL HANDLING MACHINERY

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8 inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
8 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¾ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅝-inch	9-gage	50c
6½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot.	
Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds per square foot .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot. 20c

Plates ordered 7.65 pounds per square foot .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extra

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

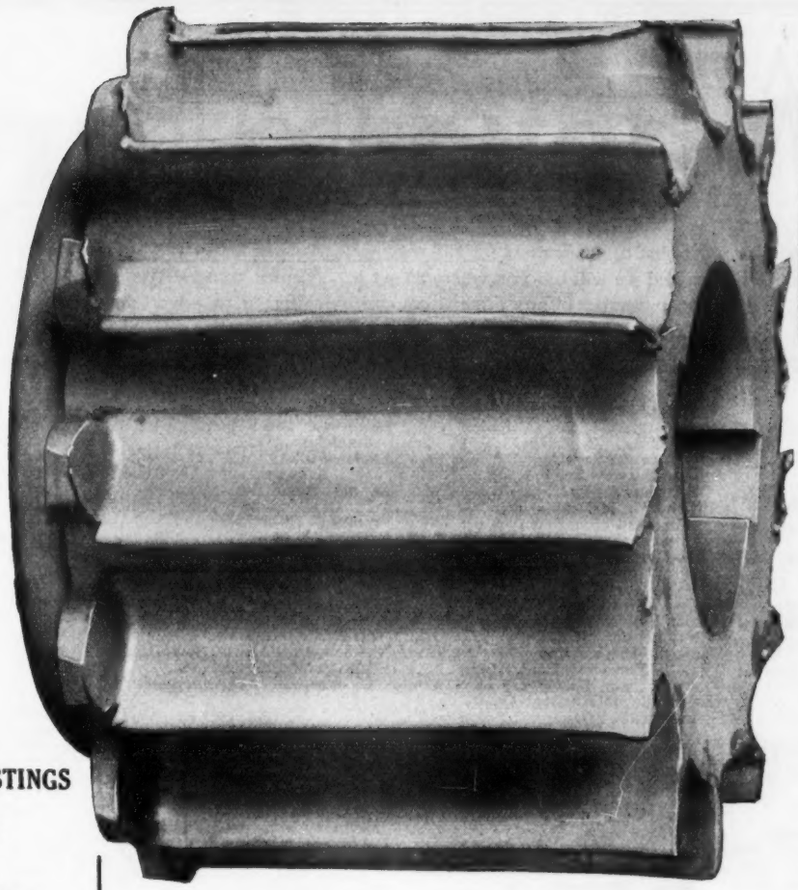
With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c



This Sivyer Alloy gear casting saved 90% of the purchase and installation expense of 12 gears in one year.

See the Sivyer Exhibit at the Oil Show

Booth Number 6, Texas Building, will furnish the information on how to cut the heavy expense of oil tool and machinery parts.

SIVYER (S) CASTINGS

DEPENDABLE

Sivyer Handles Small Orders As Well As Big

Sivyer maintains a 1-2-ton electric furnace, in which to produce alloy steel for jobs involving small tonnage.

Control is close always. Absorption of all elements is assured and distribution is uniform, as all are melted together. Heats are consistent. And the service you get from one casting is indicative of the service you will get from any subsequent casting in the same alloy.

During the past 12 years, many manufacturers, who have experienced difficulties with parts made in other metals, or by other methods, have come to us for solutions. If you are having such troubles, send us a blue print of the part and a short statement describing your difficulties, we will recommend possible solutions without obligation on your part.

Sivyer Castings Can Be Forged and Welded

Outliving 13 Ordinary Steel Castings at Less than 1/9 the Cost

After an ordinary steel gear casting on a sand milling machine had to be replaced once every three or four weeks, a Sivyer Alloy Steel gear was tried. This Sivyer gear — under severe abrasive conditions, carrying a 25 H. P. load — milled 41,200 tons of sand in the trial period of one year and three days. Though the teeth of this gear had worn away from 3-4 to 1-8 inches, and the edges peaned slightly, a close inspection failed to show a single sign of a crack, fracture or bent tooth. This Sivyer Alloy Gear casting lasted 13 times as long as the ordinary steel gear casting previously used—it saved 90% of the purchase and installation expense of 12 gears in one year—and eliminated the 13 costly delays for making replacements. Service such as this shows the long-life and low-cost qualities of Sivyer Alloy Steel Castings.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

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McKee, Arthur G., & Co., 2422 Euclid Ave., Cleveland, O.

AXLES
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Champion Machine & Forging Co., The, 3675 E. 78th St., Cleveland, O.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
National Tube Co., Frick Bldg., Pittsburgh, Pa.

BABBITT METAL
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.

BALING PRESSES
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.

BANDS AND HOOPS (Galvanized Strips)
Sharon Steel Hoop Co., Sharon, Pa.

BANDS (Iron)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Welded Iron and Steel)
Akron-Selle Co., Akron, O.

BAR BENDERS
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.

BARGES (Steel)
American Bridge Co., 71 Broadway, New York City.

BARRELS (Steel)
Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

BARROWS
Sterling Wheelbarrow Co., Milwaukee, Wis.

BARS (Alloy)
Armstrong, Sir W. G., Whitworth & Co., Ltd., Kinnaird House, Pall Mall East, London, S. W. 1, England.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Wheelock, Lovejoy & Co., Inc., 128 Sidney St., Cambridge, Mass.

BARS (Concrete Reinforcements)
Bethlehem Steel Co., Bethlehem, Pa.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
Migret, Rene, 7 Boulevard Defontaine, Charleroi, Belgium.
Ryerson, Jos. T., & Son., Inc., 16th and Rockwell Sts., Chicago, Ill.

BARS (Iron and Steel)
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Lockhart Iron & Steel Co., Pittsburgh, Pa.
Morris, Wheeler & Co., 30th and Locust Sts., Philadelphia, Pa.
Penn Iron & Steel Co., Creighton, Pa.

BARS (Steel)
Armstrong, Sir W. G., Whitworth & Co., Ltd., Kinnaird House, Pall Mall East, London, S. W. 1, England.
Bethlehem Steel Co., Bethlehem, Pa.
Bliss & Laughlin, Inc., Harvey, Ill.
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Keystone Drawn Steel Co., Spring City, Pa.
Migret, Rene, 7 Boulevard Defontaine, Charleroi, Belgium.
Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
Republic Iron & Steel Co., Youngstown, O.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

BARS, STEEL (Electric Furnace)
Timken Roller Bearing Co., The, Canton, O.

BEAMS, CHANNELS, ANGLES, ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Blystone Mfg. Co., Ironton St., Cambridge Springs, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Migret, Rene, 7 Boulevard Defontaine, Charleroi, Belgium.
Phoenix Iron Co., The, 20 So. 15th Philadelphia, Pa.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.

BEARINGS (Ball)
Hoover Steel Ball Co., Ann Arbor, Mich.
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.
Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS, (Oilless)
Rhoades, R. W., Metaline Co., Inc., Rhoades Bldg., Long Island City, N. Y.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Bearings (Tapered Roller)
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT FASTENERS
Bourne-Fuller Co., The, 1912 Scranton Rd., Cleveland, O.

BENCHES AND FRAMES (Drawing)
Morgan Construction Co., Worcester, Mass.

BENCHES AND FRAMES (Wire Drawing)
Vaughn Machinery Co., Cuyahoga Falls, O.

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